

KING EDWARD VIII HOSPITAL — THE TEACHING HOSPITAL OF THE DURBAN MEDICAL SCHOOL

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HISTORY

In 1947, on behalf of his Cabinet, General Smuts approved, in principle, the establishment of a medical school in Durban under the aegis of the University of Natal. In 1948 the Nationalist Government came into power and, after lengthy negotiations, Dr. A. J. Stals (who was both Minister of Health and Minister of Education) announced in 1949 that the Nationalist Government Cabinet had reaffirmed the approval given, in principle, for the establishment of a Faculty of Medicine in the newly constituted University of Natal.

RELATIONSHIPS WITH THE NATAL PROVINCIAL ADMINISTRATION

The development of the Durban Medical School has been made possible through the active participation of the Natal Provincial Administration. Negotiations with the Administration were initiated soon after the Treasury approval for the establishment of the Faculty was obtained in 1950. These negotiations involved the establishment of King Edward VIII Hospital as the teaching hospital of the Medical School.

The Medical School was opened in 1951, and before the clinical training of the leading group of students commenced in 1955, a memorandum of agreement was entered into between the Natal Provincial Administration and the University of Natal. In terms of this Agreement, the Natal Provincial Administration made King Edward VIII Hospital available as the teaching hospital of the Medical School. The Administration has made substantial financial contributions towards the maintenance and development of King Edward VIII Hospital and the Medical School.

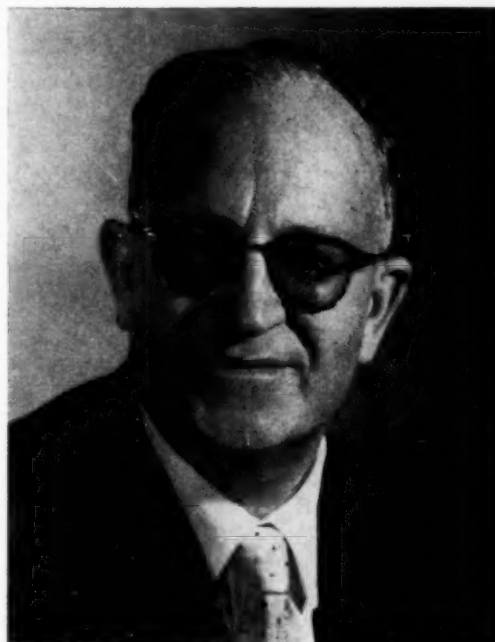
The provisions of the Agreement led to the creation of a joint medical school staff establishment and all members of this staff receive their emoluments, or part of their emoluments, from the Natal Provincial Administration for their service responsibilities in the hospital.

The initial integration of the part-time members of staff of the hospital gave rise to considerable difficulty, and the Council of the University and the Administrator-in-Executive Committee of the Natal Provincial Council appointed a Committee of Enquiry 'to investigate and report upon the medical staffing conditions of the Provincial hospitals in Durban, with a view to making recommendations in regard to the policy that should be pursued in appointing personnel in the teaching hospital of the Durban Medical School.' The Committee was also empowered to report on such other matters as it considered of importance and relevant to the enquiry.

Professor G. A. Elliott was appointed Chairman of the

Committee of Enquiry, with Dr. G. G. Campbell and Dr. Jack Drummond as members. The report of the Committee was published on 26 October 1955. The Committee proposed a scheme for the pooling of part-time staff and resources by the Natal Provincial Administration and the University at the hospital. In terms of this scheme, the financial contributions made by the University through the State Department of Education for part-time staff were pooled with the existing contributions of the Natal Provincial Administration to provide for a system of staffing whereby all part-time visiting staff members became teachers at the University. This development corresponded with staffing arrangements that had been made at teaching hospitals attached to the other medical schools in South Africa.

Final arrangements regarding the appointment of part-time members of staff to the joint establishment were com-



Dr. S. Disler, the present Medical Superintendent of King Edward VIII Hospital, Durban, who is President of the Natal Coastal Branch of the Medical Association of South Africa and a Past President of the Natal Inland Branch of the Association. Dr. Disler is also a Past Vice-Chairman of the Hospital Administrators' Group of the Medical Association, and he is Senior Lecturer in Medical Administration at the University of Natal.

pleted early in 1956. In this way, largely through the co-operation of the Natal Provincial Administration and the part-time specialist staff (most of whom had previously held visiting staff appointments at the hospital), it became possible to provide an integrated staffing arrangement which has ensured to the Medical School the highest possible standards in clinical training. A spirit of cooperation and mutual confidence has developed between the University of Natal and the Natal Provincial Administration, and between the full-time and part-time members of the academic staff.

At present there are 21 full-time members and 34 part-time members of the academic staff serving the University and the hospital. (These figures do not include all the premedical, preclinical and honorary members of staff.)

STUDENTS IN TRAINING

The first group of students qualified in November 1957. A total of 65 graduates have obtained their M.B., Ch.B. degrees at the University of Natal since November 1957. In the present year of registration (1961) there are 213 students, distributed in the various years of study as shown in Table I.

There are African, Indian, and Coloured students in the Faculty. By an arrangement entered into between the Ministry of Foreign Affairs and the Governments of the

Central African Federation and the Protectorates, a limited number of extra-territorial Africans have been admitted to the Medical School. Through the 7 years of study, there

TABLE I. DISTRIBUTION OF STUDENTS

Year	Men	Women	Total
Preliminary	35	6	41
First	29	2	31
Second	38	4	42
Third	27	5	32
Fourth	17	2	19
Fifth	22	1	23
Sixth	22	3	25

are in 1961 10 students from the Central African Federation, 3 students from Basutoland, and 1 student from Swaziland.

CONCLUSION

In spite of many difficulties, largely dependent upon the congestion in the hospital, the Durban Medical School has enjoyed several years of considerable activity in association with King Edward VIII Hospital. There have been developments in all divisions, not only in teaching, but also in research. There is no doubt that the hospital has made a most significant contribution to the development of medical services in the country.

THE EARLY HISTORY OF KING EDWARD VIII HOSPITAL, DURBAN

R. E. STEVENSON

'The first time I beheld this hospital, it was as a monument near the Durban Bay, and I knew that the patients would not want for fresh air.'

Thus wrote nurse Virginia Yeni in the King Edward



Miss V. L. Borgen, the present Matron of King Edward VIII Hospital.

VIII Hospital magazine in 1936. Her impression picturesquely described the magnificence, by the standards of those days, of the structure and site of the new hospital at Congella.

At Addington Hospital, the old 'temporary' non-European wards had become so unsavoury after their many years of crowded existence, that by about 1934 it became obvious that conditions were too deplorable to be allowed to persist. After the protracted negotiations, inseparable from dealings between Province and City, a site at Congella was selected and an entirely new non-European hospital was planned.

Architects practising in Natal were invited to submit designs, and the firm of Messrs. Cowen, Powers and Ellis were awarded the first premium and appointed to develop the scheme.

Originally the hospital consisted of a series of single-storey units with a 2-storey administrative section and reinforced concrete-framed, multi-storey ward blocks. The buildings were faced externally with red facing bricks under corrugated asbestos roofing. Verandahs were designed on the west elevation of all wards, but these were of necessity used as bed space from the beginning. The first medical superintendent (Dr. R. E. Stevenson) was appointed before the contract was completed. He was therefore in a position to collaborate with the architects in the final stages.

The buildings were ready in mid-1936. The total cost of construction was R265,000 or less than R380 per bed—an astonishingly low figure, all the more remarkable in



Miss F. M. Fitz-Gerald, the first Matron of King Edward VIII Hospital.

that the buildings and fittings were, by non-European standards then current, extravagant and lavish.

For several months it was a common occurrence to see patients with ivory buttons labelled 'Push', 'Pull', 'Hot' or 'Cold' in the lobes of their ears.

The design was simple and the type of construction suitable. However, since everyone who works in or near a hospital is a heaven-sent authority on hospital design, there were as many criticisms as there were doctors and nurses. However, these criticisms cancelled each other out and there was, in the final analysis, little to cavil at even in the light of the incredible, rapid extension of the work and the gross overcrowding that so quickly supervened.

Medical and Nursing Staff

The assistant visiting medical staff came over from Addington almost to a man, and even before the days of compulsory internship there were nearly always plenty of resident medical officers.

As far as nurses were concerned, Addington was unable to offer much help, but an adequate number of European sisters (there were virtually no trained non-Europeans in those days) came from other Natal hospitals, and about 30 more were imported from Britain. Nearly all these nurses were young and newly qualified. They introduced a refreshing originality of thought and attitude to their patients and their work — which became traditional in the hospital.

Sixteen men came from the Special Service Battalion to be trained as male nurses. Young, intelligent, and keen, nearly all passed their examinations with distinction, and they have had very successful careers.

Early in 1936, 40 hand-picked Bantu girls were taken on as probationers. They were sent to the Inanda Seminary where, under the guidance of Miss F. M. Fitz-Gerald, the

newly appointed matron, and the Seminary staff, they received preliminary training in nursing and brushed up their English and other school subjects.

At the end of 6 months, having been replaced by a second batch, they started work at the hospital.

The progress of these original nurses was interesting and can be followed to a large extent by their naive contributions to their hospital magazine.

King Edward VIII Hospital was the first Government Hospital to train nurses for the Council Certificate in South Africa.

Trained by a matron who spoke their language fluently, and by South African sisters who were keen and understanding, the girls developed a sense of responsibility and a contented outlook. Their concerts, religious society, library, tennis, and magazine kept them healthily occupied, and they emerged efficient nurses and self-respecting members of society.

A few quotations from their magazine reveal a surprising perception and humanity often quaintly expressed:

'I would like to be a nurse who can make people smile though their bodies are ill and worn out.'

After a busy Saturday night in the casualty department: 'I would rather be a nurse than remain at home to be stabbed like a cow.'

'...the tennis court had been disagreeing with our tennis players — now the linings are clearly white as far as the eye can see.'



Dr. R. E. Stevenson, the first Medical Superintendent of King Edward VIII Hospital.

After the wedding of one of the house surgeons, to which the nurses were invited—'there was a little silence when the bride was to enter; as she entered she was handed by the medical superintendent who presented her at the hands of the bridegroom.'

Concluding verse of a paean of praise:

'Don't you love the new building for Basha's
The beautiful walls of Jericho
The building that will never fall till doomsday
The building that shall be visited by the Umbilo monkeys
The building that hides the main-line train.'

Official Opening

After a preliminary period of 3 nerve-shattering months, the hospital was officially opened. The function took place on 3 December 1936.

It was half past ten in the morning when, to use the words of probationer nurse Chrissie Masongo, 'people flocked to the hospital to take their seats... At eleven, the Governor General and Lady Clarendon arrived accompanied by some men in authority. The crowd raised up from their seats with eager eyes... the Earl of Clarendon gave a long speech which was again and again applauded by the audience...'. The 'men in authority' were Mr. F. C. Hollander, M.E.C., Chairman of the Hospital Advisory Board, and the Honourable H. Gordon Watson, Administrator of Natal. The hospital was officially named after King Edward VIII.

Expansion

From the start the hospital boomed. It was designed for 720 patients. The figures given below show how much and how fast it expanded:

	1937	1940	1944	1950	1960
Average number of occupied beds	500	820	1,100	1,636	1,739
Patients admitted	13,350	27,125	36,345	45,447	70,572
Outpatients	29,100	69,000	302,315	415,293	558,146
Births	300	2,000	3,520	6,347	13,908

The increase in the number of births is significant. At one stage, the medical superintendent reported that 10 tons of babies had been born in a year; to this he might have added that, if laid end to end, they would have reached from the post office steps to the West Street pier.

Such fantastic expansion without commensurate increase in accommodation or funds, added to a great shortage of European nurses (there were at one time 40 vacancies in an establishment of 70), and imposed an almost intolerable strain on all sections of the staff.

The war years were particularly difficult, but did at least ensure that 'temporary' weatherboard wards (still in use) were provided by the military authorities.

On one occasion, 100 West African soldiers off a troop ship had to be accommodated in an already overcrowded hospital at less than 12 hours' notice. Such problems have been commonplace in the history of the hospital.

In 1948, the adjacent City Fever Hospital was taken over. Ancillary outpatient clinics have been established at Beatrice Street (the building—a gift of the Indian-African



King Edward VIII Hospital (Kwa Khangelani), Durban.

Line), Cato Manor, and Clermont. Ward relief was also effected by the taking over by the Natal Provincial Administration of the Point Hospital from the Indian Immigration Bureau in 1949, and Clairwood Hospital from the Union Government in 1956.

The cost of all these services and of the Medical School is a source of horror to the Natal taxpayer who remembers that the ratio of non-Europeans to Europeans in Natal is enormously higher than in any other Province.

On the other hand, the opening of a new hospital which was completely independent of any European institution, which had a young and enthusiastic Visiting Staff and, though overcrowded, was provided with decent equipment and fittings, resulted in vastly improved standards of service to the non-European patients and of the practice of medicine in Durban.

MENTAL HEALTH

B. CROWHURST ARCHER, M.D., *Durban*

The day has passed when the mental health of the nation can be left in the hands of individual specialists working in isolation. This is the age of teamwork, and the next great advance will come, not in the form of further discoveries in the treatment of specific diseases, but, as Thomson¹ said, from a study of the precise relation of medical practice to society.

It has been shown that a third of all patients attending the outpatient departments of general hospitals suffer from psychiatric and another third from psychosomatic illness. It is also known that half the patients who consult private practitioners complain of neurotic symptoms. It is generally agreed that the problem can only be satisfactorily resolved by integrating psychiatry into the 'general medicine' curriculum and combining it into a multi-disciplined mental health service. It is true that the provision of a satisfactory mental health service for South Africa presents certain difficulties on account of the size of the country and the uneven distribution of its multi-racial population. But, with the introduction of the successful methods of physical treatment, and the recently proved economic and therapeutic advantages of 'early-treatment centres', the problem is not as great as it would at first appear.

THE MENTAL HOSPITALS

The mental hospitals should retain their key position in any proposed mental health service and, wherever possible, they should be raised to the status of teaching hospitals with University affiliation. Part-time visiting physicians of all grades should be appointed to them. This would not only relieve the present shortage of medical staff and establish closer relations between the general hospitals and the mental hospitals, but it would also promote teaching and research. Arrangements should be made, too, for the interchange between members of the nursing staffs of general hospitals and mental hospitals, since it is essential that all sisters, in teaching hospitals at least, should have some psychiatric experience.

In 1939 I drew attention to the immensity of the work which was undertaken and to the certainty that the work would rapidly and progressively increase: '... an enormous amount of our work arises from preventable causes — hospital and public-health work are most intimately connected; the health of the non-European is deplorable and this is mainly because of poverty and the inadequacy of public-health measures; nearly all Native patients are grossly undernourished and infested with intestinal parasites; the incidence of tuberculosis and venereal disease is fantastic'.

These conclusions, though shocking, were by no means overstatements. They now apply to a considerably less extent because of the improvements in feeding and housing which are slowly but surely becoming apparent. Today the hospital is a proud and indispensable institution which deals with 600,000 outpatients and 70,000 inpatients yearly.

The third Report of the World Health Organization Expert Committee on Mental Health² requires of the mental hospital that it should not exceed 400 beds and should be within the community it is to serve, and a small early-treatment block should be attached to the general hospital. Apart from the advantages to patients and their relatives, Marwick³ pointed out that this might solve the acute mental-nursing shortage. Large hospitals of 1,000-2,000 beds, isolated from the social and cultural amenities of a town, are not likely to attract or retain the services of young people.

Other requirements include the development of a therapeutic atmosphere, which is dependent on the removal of unnecessary locks and bars; the development of a therapeutic team; patient activity and participation in remunerative work; group therapy; the preservation of the personality, initiative, and sense of responsibility of the patient; active rehabilitation; and extramural community care.

EARLY-TREATMENT CENTRES

The present overcrowding in mental hospitals could be relieved by the gradual establishment throughout the Republic of early-treatment centres in the 'catchment areas' of the mental hospitals. These centres should be run on similar lines to the Antwerp⁴ and Worthing⁵ experiments which provide a small number of beds, a day-patient system (which is a compromise between an inpatient and outpatient service), and full facilities for domiciliary treatment. It has been shown that this district mental-hospital system has so reduced the number of admissions of the neighbouring mental hospitals that some writers contend that no further mental hospitals should be built until these experiments have been worked out. As I have pointed out elsewhere,⁶ a pilot scheme of this kind should be started immediately in Durban. This city is over 50 miles away from the amenities of the nearest mental hospital and would have to rely on its own resources; it is large enough to do so.

I have also recommended⁷ that a pilot scheme for the control and socialization, if possible, of persons suffering from psychopathic personality, should be established on similar lines to the psychopathic hospital at Herstedvester in Denmark.

GENERAL HOSPITALS

The importance of the specialized mental hospitals and their district mental-hospital system in no way excuses the general hospitals from providing facilities for treating mental illness. The psychiatric department of every university medical school should be under the direction of a full-time professor of psychiatry, who should have at his disposal (for teaching purposes) an adequate number of beds, an outpatient clinic, and auxiliary services — psychiatric social workers, non-medical psychologists, and occupational therapists. The range of activities of the teaching psychiatric unit should provide an all-round training in psychiatry in the outpatient department and the wards of the unit — for general practitioners, intending specialists and psychiatric auxiliaries, including probation officers, health visitors, and similar workers. The unit should also establish, for teaching purposes, a close working liaison with institutions and services outside the unit so as to provide supplementary instruction and teaching material. A children's psychiatric clinic should be an integral part of the teaching psychiatric unit, and this clinic should act in a consultative capacity to the child-guidance clinics in the area. The teaching psychiatric unit should be the centre and coordinating focus of psychiatric research for the region.

THE NURSING PROBLEM

A solution to the acute shortage of nurses may be found in the enrolment of auxiliary nurses, both in the early-treatment centres and the psychiatric units of general hospitals, provided the necessary teaching and training facilities are made available. During the last war I had charge of two Royal Navy psychiatric hospitals which were partly staffed with specially selected Red Cross VAD nurses. They not only made a definite contribution to the morale and discipline of these establishments, so essential to any form of rehabilitation, but after 3-6 months of training, they became useful members of the psychiatric team. It is interesting to record that some of these nurses, as a result of the teaching and training they had received, went on after the war to qualify as psychiatric social workers. These auxiliary nurses will again become necessary in total warfare, national emergencies, and other disasters that make it imperative that psychiatric nursing should be an essential part of their civilian training.

SOUTH AFRICA

These are the broad lines along which the mental health services are at present evolving overseas. But attempts to impose this pattern rigidly on other countries with different traditions and cultures and at different stages of social development might well lead to disappointment and failure. Before attempting to plan a mental health service for the Republic of South Africa, one should consider the

general state of medical care throughout the country, the nature of the work of the general practitioner in both urban and rural areas, the mental-health resources at present available in the community, whether the majority of mental disorders in any particular culture are secondary to physical disease or caused by socio-economic stresses, and whether the emphasis in treatment should be sociological, psychotherapeutic or psychopharmacological. The first essential of a mental health service is that it should be realistic. Three groups have to be convinced that it is workable and that it will benefit them personally: The medical and nursing staffs of the present psychiatric service, the government administrators, and the general public. The initial appeal must be made to the doctors, because without their support the scheme can never get started. As the doctors and their staffs are usually over-worked under the present system, they must be convinced that their work will be made easier and more rewarding by the adoption of the plan. Administrators are more likely to approve a plan that is already in operation or can be started without involving them in any great financial outlay or political responsibility. Finally, the plan should be self-advertising and flexible, and should be so framed that once the first step has been taken, a public demand is created for the next.

THE HOSPITAL OF THE FUTURE

The mental hospital of the future in South Africa should be defined by function more than structure. Its curative sections, consisting of short and medium-stay early treatment units, should be in or near general hospitals, where most of the outpatient work will be done in the future.

The community services for prevention, screening, and after-care will depend for their success on the cooperation of the various authorities concerned. It is suggested that regional medical officers of mental health should be appointed under the Commissioner for Mental Hygiene. These psychiatrists should work outside the mental hospitals and coordinate the numerous services concerned directly or indirectly with mental health; especially with the Departments of Education, Social Welfare, Labour, the Juvenile Courts, the Provincial and Local Authorities, and the various voluntary social organizations.

CONCLUSION

Now is the time to investigate the whole question of a mental health service for this country in a scientific and constitutional manner and at the highest level. This is a matter of some urgency because there is a danger that the outmoded recommendations of the last commission of enquiry, which was published as long ago as 1937, may be implemented. This would mean that the old uneconomic and therapeutically sterile policy of custodial care and 'bigger and better hospitals' would be further entrenched.

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SILVER JUBILEE OF KING EDWARD VIII HOSPITAL

On 3 December 1936, twenty-five years ago, King Edward VIII Hospital, Durban, was officially opened by the then Governor-General, Lord Clarendon, in the presence of a distinguished and representative gathering. Earlier that year, as the buildings were nearing completion, the senior staff of the hospital were appointed. The Matron, Miss F. M. Fitz-Gerald, took charge of a class of about 14 Bantu pupils at the Inanda Seminary, where they had received preliminary training in nursing, anatomy, physiology, and English. These nurses were ready to begin their duties at the hospital under trained European sisters by about August 1936. On 12 October the first batch of patients was transferred from Addington Hospital. A few weeks later all the remaining Addington Indian and Bantu patients had come over to the new King Edward VIII Hospital, which was by then functioning in all its departments.

The first Chairman of the Hospital Board was Mr. F. C. Hollander, M.E.C., and the first Chairman of the Visiting Medical Staff Committee was Dr. D. F. Standing. The Medical Superintendent, Dr. R. E. Stevenson, later Director of Provincial Medical and Health Services of Natal, assumed duty at the end of 1935, so as to supervise the completion of the building and to organize the equipping and staffing of the hospital.

Over the years the hospital has attained great popularity with both the Indian and Bantu people of Natal. At the outset, however, the Bantu were reluctant to enter hospital, but today the contrary is the case. Dr. S. Disler, the present Medical Superintendent, reported that in 1960 the daily average number of inpatients was 1,739 and that there

were 558,146 attendances at the outpatient department. During the same year 13,908 babies were born under the supervision of the Obstetric Department, which must be one of the busiest departments in the world. These figures in themselves do not convey the great services provided by the hospital. This is perhaps best illustrated by the enormous area from which the patients are drawn. They come from the ends of the Province; from Port Edward in the South to Ingwavuma in the North, from the mountains to the coast. The Bantu today find their way in their thousands from all over the Province of Natal to King Edward VIII Hospital in Durban.

The hospital training school for Bantu nurses and midwives has had considerable success. There are 611 pupil nurses and 99 pupil midwives under instruction. The popularity of this training school may be judged by its long waiting list and by the fact that the school not only serves the needs of the hospital, but also provides trained Bantu nurses for the whole of South Africa.

This hospital has a wealth of clinical material, and it was not surprising that a Faculty of Medicine was established in 1951 by the University of Natal for the training of non-European medical students. These students,

after completing their preclinical studies at the Medical School, began their clinical training in the wards of King Edward VIII Hospital in 1955.

Here then is a fine record of high endeavour, which has been crowned with success in so short a time, and one of which the Provincial Authorities, the University, and every member of the staff, both past and present, can be justly proud.



Medical School, University of Natal

MEDIESE OPLEIDING AAN DIE UNIVERSITEIT VAN NATAL

Die Mediese Skool van die Universiteit van Natal is in 1951 geopen, en in 1955 is 'n begin gemaak met die kliniese opleiding van die eerste groep studente. Hierdie kliniese opleiding het plaasgevind, soos dit trouens nou nog die geval is, in die Hospitaal Koning Eduard VIII. Dit beteken dus dat die Mediese Skool van die Universiteit van Natal sedert sy begin intiem verbonde was aan die hospitaal waarvan ons nou die vyf-en-twintig-jarige bestaan herdenk.

Hierdie gebeurtenis gee ons nou die geleentheid om die een en ander te sê oor die probleme in verband met die opleiding van mediese studente, waarvoor die Universiteit te staan gekom het, asook oor die vooruitsigte en toekoms van hierdie skool.

Die Mediese Skool van die Universiteit van Natal neem 'n besondere plek in ons land in, aangesien die studente-bevolking slegs uit Bantoe-, Indiër-, en Kleurlingstudente bestaan. Sedert die begin van die Skool is hierdie feit as 'n geleentheid en uitdaging aanvaar in die verwagting dat dit moontlik sou wees om 'n volwaardige mediese skool op te bou, waarvan die standaardde goed sou vergelyk met die reeds gevestigde skole, en wat 'n spesiale bydrae sou kon maak tot die behartiging van die gesondheids-behoefes van miljoene nie-Blankes in Suidelike Afrika.

Van die begin af het die skool uitstaande personelede getrek en nuwe rigtings ingeslaan. Waar baie persone meegelyp het om die inrigting op te bou, is dit nie goed om enkele name vir besondere vermelding uit te soek nie. Niemand kan ons egter kwalik neem nie as ons sê dat die Instituut vir Gesins- en Gemeenskapsgesondheid, wat onder die leiding gestaan het van prof. S. L. Kark, baie daartoe bygedra het om die naam van die Mediese Skool van die Universiteit bekend te laat word, selfs in internasionale kringe. Dit is jammer dat die bestaan van hierdie Instituut na twintig jaar ten einde moes kom — dit het egter plaasgevind oor redes waarmee die Mediese Skool as sodanig selfs niks te doen gehad het nie.

Van die begin af het hierdie Skool egter ook ernstige probleme teekom. Daar was onder andere die moontlikheid van die beëindiging van die beheer oor die Skool deur die Universiteit van Natal. Dit is nie hier die plek, of nou die tyd, om hierdie hele probleem in besonderhede te bespreek nie. Wat ons egter tog wel kan sê, en

ons doen dit met verwysing na al sulke belangrike nuwe-probleme soos die kwessie van personeelvoorsiening, akademiese status, ens., is dat die oorgrote deel van die mediese professie in die land so 'n stap nie sou verwelkom nie. Dit sal nie goed wees om die Skool te verwyder van die totale universiteitsagtergrond nie, want slegs teen dié agtergrond kan interdepartementele en interfakulteits-omgang op 'n bevredigende professionele en akademiese grondslag opgebou word. Ons hoop dat die huidige toestand wat betref die beheer van die Mediese Skool van die Universiteit van Natal onveranderd sal kan bly voortduur.

'n Ander probleem wat die Mediese Skool moes ondersoek en hanteer, is die kwessie van die voor-universiteitse akademiese uitrusting van die Bantoe-studente. Die algemene ondervinding was dat ver te veel van die Bantoe-studente uitsak voordat hulle kan kwalifiseer — 'n toestand van sake wat bepaald in verband staan met hul skolastiese agtergrond. Die Universiteit van Natal het hierdie probleem benader deur 'n addisionele voor-mediese jaarkursus in te stel, wat o.a. 'n studie van die taal insluit wat die studente in matrikulasie op die hoër graad geneem het. Ook is die Senaat van die Universiteit besig om te onderhandel met die Gemeenskaplike Matrikulasieraad in 'n poging om tot 'n vergelyk te kom wat betref die kwessie van die neem van 'n Bantoe-taal op die hoër graad in matriek. Aangesien daar verskeie Bantoe-tale is, en nie net een nie, en aangesien Engels bloot om praktiese redes nog lank die medium van onderrig in die mediese kursus sal moet bly, moet alles wat moontlik is, gedoen word om die studente se vaardigheid in die taal van onderrig so goed as moontlik te maak. Ons hoop dat die ervaring van die Universiteit van Natal self in hierdie verband swaar sal weeg by die Matrikulasieraad.

Wat seker is, is dat almal moet saamstaan om die standaard van opleiding van mediese studente in Natal so hoog as moontlik te hou. Daar is 'n ontsettende groot behoefte aan nie-Blanke geneeshere in die land, maar dan moet hulle nie 'tweede klas' geneeshere wees nie. Verslapping in die standaard van opleiding van nie-Blanke mediese studente sal lei tot verlaging van die gesondheids-peil van ons hele bevolking — Blank sowel as nie-Blank.

RECENT OBSERVATIONS ON ZULU AND NATAL INDIAN DIABETICS IN DURBAN*

G. D. CAMPBELL, M.B., M.R.C.P. (EDIN.), *Physician*, and JOHN MCKECHNIE, M.D., B.Sc. (HONS.), M.R.C.P. (EDIN.), *Registrar*

The Diabetic Clinic of the King Edward VIII Hospital, Durban, Natal

1. Present Size and Rapid Growth of the Diabetic Clinic of the King Edward VIII Hospital

It is just over 3 years since the establishment of a diabetic clinic in the MOPD of the King Edward VIII Hospital, and we have just registered our 3,000th new patient. At first, the clinic was held on a single half-day session

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weekly, since we had no idea of the large number of patients that we were going to collect. Within 4 months a second half-day was found necessary, and it is only by energetic manoeuvres, such as giving larger drug allowances, that we have been able to keep the attendances within reasonable limits. However, recently no less than 108 diabetics had to be seen by 2 doctors in a single half-day session, which is overstepping the bounds of reasonable, let alone good, medical practice.

Of the present total of 3,103 new patients, 545 are Africans—mostly Zulus, and 2,558 Natal Indians. Contrary to our previous expectations, there has been no falling off of clinic registrations of new patients, the rate today being greater than it was in the early days of the clinic. The monthly registrations of new patients in our first 3 years were 79, 79, and 88 patients respectively.

2. The Incidence of Diabetes in the two Races

We have not embarked upon incidence studies such as those carried out by our colleagues north of the Vaal River, who, judging by their lively journal correspondence, will be dilating upon this problem! On the basis of our observations we feel that diabetes would appear to be far more common amongst Africans in big-city dwellers¹ than in those that live in the countryside; in fact, we have noted a remarkably constant 'period of exposure' to town life, before the maturity-onset patient develops his diabetes—hence the 'rule of 20 years'. We have previously observed, on the basis of our new clinic registrations and the probable population at risk, that diabetes would appear to be about 8 times as common in Natal Indians as in urban-dwelling Africans.² This would fit in well with the figure of Seftel³ of 1% for urbanized Africans in Johannesburg, and that of Wood⁴ of 8.8% for Natal Indians in a sub-economic housing scheme. However, we now agree with Seftel's latest observations on Transvaal Indians,⁵ that the figure of 8.8% is probably too low, in view of the fact that his series includes many Muslim (i.e. affluent) Indians, and we have shown (see below) how much greater the incidence of family histories of diabetes are in Muslims than in the poorer Hindu patients, who would have formed most of the population that Wood⁴ sampled.

3. Treatment of Diabetes

Briefly, the diabetes of the Durban African resembles the syndrome seen in the European, with diabetic ketosis being an important problem,⁶—only 25% of patients, a smaller proportion than in Europeans, being truly dependent upon insulin. In the Natal Indian diabetic, ketosis is very uncommon, and less than 4% of the total patients require insulin.² We have had good results with the oral anti-diabetic agents even in young and pregnant diabetics, and on the strength of this latter response, we regard these patients as falling into a group that we have called the 'insulin-independent young diabetic',⁷ a variant that, we have no doubt, will be described from many tropical and subtropical countries when the use of oral agents becomes as widespread in young diabetics as it is in Durban. In both races, with many underprivileged diabetics, the oral agents have for obvious reasons been a great boon, and we have used them on a very wide scale. It is to the use of these drugs that we ascribe the phenomenal growth of our clinic. At present, *inter alia*, we have 1,200 patients on chlorpropamide—the largest single series in the world—and 106 patients upon metformin, coincident with other drugs, especially chlorpropamide—a most valuable combination. The rest of the large number of patients at present on the sulphonylureas (about 400) are on tolbutamide. Our numbers are not accurate because, after 3 years of using tolbutamide, we are seeing increasing numbers of secondary failures with this drug. We have assessed the incidence of significant side-effects of sul-

phonylureas in a series of 2,061 patient-trials as being 1%⁸—metahexamide having been the chief offender. In common with many workers in the world today, we find that the serious effects from tolbutamide and chlorpropamide are equal, having had only a single very severe reaction with each drug. Metformin has been used in small doses without ill-effect. We have noted that it is very easy to talk patients out of many of the so-called 'side-effects' of the sulphonylureas—something that has also been remarked upon by other observers.

4. The Nature of the Diabetic Syndrome in the Natal Indian

Our widespread use of the oral agents has accentuated the very small percentage of Natal Indian diabetics who are truly dependent upon insulin—4%.² In addition, their mild diabetic state has been shown to be particularly productive of severe and lethal diabetic vascular disease, morbidity, and mortality.^{9,10} It has previously been noted from our clinic how many of our Natal Indian diabetics, of whatever age or sex, are short in stature, very fat (often with trunk and buffalo-hump obesity), hypertensive, possessed of white striae, resistant to and not dependent upon insulin and seldom becoming ketotic.⁷ Furthermore, we reported⁷ how commonly facial and body hirsuties have been seen, in extent and distribution resembling that of female pseudohermaphroditism in the European. In view of the widespread belief that this trait is very common among the Natal Indian females, we have recently found that the incidence of moustaches and 'sideburns' in 100 female Natal Indian diabetics was 74% and 50% respectively, and in 93 controls only 15% and 15% respectively.¹¹

We previously attempted to tie up our clinical observations with those of Gillman and Gilbert¹² in their hypophysectomized, adrenalectomized and pancreatectomized baboons, and had come to the following conclusions:⁷

(a) The high incidence of insulin-independence and absence of ketosis would indicate, in these people, satisfactorily functioning islet cells, (or *vide* Vallance Owen,¹³ low levels of antagonists or alternatively islets resistant to antagonists).

(b) The short stature and absence of ketosis would indicate low levels of growth hormone. (Tall Natal Indian diabetics are rare.) The hypophysectomized diabetic baboon only becomes ketotic when growth hormone is available.¹²

(c) The obesity, striae, hypertension, severe vascular disease,¹⁰ insulin resistance, insulin independence, body and facial hirsuties (and again perhaps short stature) would point towards more than usual production of adrenal 'glucocorticoids' and androgens.

Thus we have a glycosuric syndrome probably characterized by normal insulin levels, low-growth hormone levels and high levels of certain adrenal hormones.

Furthermore, we have postulated a theory based upon Vallance Owen's observations to explain the fact that diabetic vascular disease may appear before glycosuria in the Natal Indian. We believe that there may be one or more antagonists with simultaneous actions upon the islet cells and the arterioles, the former resulting in glycosuria, and the latter specifically causing, or resulting in, 'diabetic' vascular disease. In other words, in African and European patients where 'diabetes' exists for some time before vas-

cular disease supervenes, the effect of the antagonists is first manifest in a failure of the 'islet cells', with glycosuria and the classical symptoms of diabetes. Because the vascular endothelium is hereditarily or racially relatively more resistant to the antagonists, vascular complications occur later. In the Natal Indian, however, the arterioles are far less 'sturdy' than the islet cells, and consequently it is not uncommon to see diabetes present as a retinopathy,¹⁷ for instance, without even impairment of glucose tolerance, since the vessels 'give in' before the islet cells. These observations are borne out by the fact (only too well known to many insurance actuaries at their great cost) that the vascular tree of the Natal Indian is very brittle indeed, and even in the non-diabetic, the death rate from vascular disease in relatively young people is far greater than in other races. We believe that the high proportion of insulin-independence in the Natal Indian diabetic is a measure of relatively good function of sturdy islet cells. If we are to postulate an adrenal component to this diabetic syndrome, then we must remember Vallance Owen's observations¹⁹ that his antagonists are dependent upon, and their action enhanced by, certain hormones, one of the chief of which is the adrenal contribution. We hope that in the very near future we will be able to avail ourselves of Dr. Vallance Owen's kind invitation to send him blood samples. It will be particularly interesting to see if he can find similar characteristics in our bloods and in the bloods of those rare European diabetics who develop vascular disease before glycosuria.

5. Family Studies

African diabetics, as do most Africans who are handled by doctors who speak their language, give an excellent family history, and though they have a fairly good idea of what constitutes diabetes, they are not nearly as well informed as the Natal Indian, who, strangely enough, takes about 4 visits to decide whether he has a family history of the disease—perhaps because it takes him some time to think about his myriad relations. Less than 4% of African patients in whom information was considered reliable, have a family history—the classical example being the Zulu Royal family in whom the disease is rife, both in direct and cadet lines.² In a previous study of 493 Natal Indian diabetics, we found a family history (excluding consubniality) of 47.8%.¹⁴ Recently, a further 746 patients have been reviewed, and a total incidence of 45.6% obtained.¹⁵ In both groups the incidence of family history was found to parallel social and economic status, the highest being found among the Muslim people, who, as is well known, are financially the best-off in the Natal Indian population.

We have been greatly stimulated by a study of diabetes in husbands and wives:¹⁶ In our first 2,500 Natal Indian patients, we have managed to record family histories in about 2,000 patients. Amongst these we have found no less than 90 such consubnial pairs, not all of whom have been attending the clinic and, in these, observations have been based upon one of the pair. (Frequently the one spouse has been widowed by diabetes in the other.)* Secondly, that

* The following late addition should be read as part of the text: At first¹⁶ we were inclined to think that this phenomenon was merely a reflection of the high incidence of diabetes in the Natal Indian race, but for the striking way in which many of these pairs developed diabetes simultaneously or almost simultaneously after between 15 and 55 years of marriage.

emergence of diabetes in these pairs may be related to parity—even in the male partner.¹⁹ This theory is not as strange as it may seem, especially in the light of Wexler's work in Cincinnati,²⁰ where he showed that atherosclerosis in the rat develops at the same rate in both parents, according to the number of litters. At present allylthiocyanate is being fed to experimental animals, more particularly by Butterfield and his associates at Greys Hospital,²¹ on the basis of our observations, and we await their results with interest. Anyone who has smelt or tasted this noxious substance would be surprised that it is not able to inhibit more enzyme systems!

6. Studies of Fats, Fibrinolytic Activity, Serum Mucoproteins and Cholesterols in Natal Indian and Zulu Diabetics

Recently Hathorn, Gillman and Campbell,¹⁰ working in our clinic, took advantage of the remarkable discrepancy between the incidence of vascular complications in Natal Indian and Zulu diabetics to study in a large number of each group certain blood components, notably total fats, fibrinolytic activity, serum mucoproteins, and serum cholesterols. Briefly, it was found that in the Natal Indian (in whom diabetic vascular disease is probably four times as common as in the Zulu), the levels of total lipids, especially in females, were much higher than in the Zulus, and that these high levels appeared to be mirrored in poor fibrinolytic activity. In Zulus, fibrinolytic activity was much more effective and total fat levels lower. There was little difference between cholesterol levels in either the diabetic groups or in the large number of controls. Interestingly enough, contrary to figures reported for Europeans with vascular disease,²² serum mucoproteins were raised in neither diabetic group. In the light of these findings, it is interesting to note that the incidence of objective diabetic neuropathy is 15 times higher in the Natal Indian than in the Zulu, and one wonders just what part the vasa nervorum play in the genesis of this syndrome.

It would appear highly likely (on the basis of these blood studies, and the observations upon diabetic vascular disease in the Natal Indian by Cosnett⁸ and McKechnie,²³ and in the Zulu by Campbell⁶) that increased vascular involvement in diabetics of the same duration of disease would appear to correspond with higher total lipid levels and poorer fibrinolytic activity in the blood.

7. Triparanol ('Mer 29')

Melby *et al.*²⁴ reported that triparanol (Mer 29) has an inhibitory action upon adrenal steroid synthesis, if given in a sufficiently large dose (1 G. daily). In view of our belief that the adrenals play a predominant part in the syndrome of diabetes in the Natal Indian, we were anxious to assess the effect of Mer 29 in our patients. In 12 patients the drug was given in a dose of 500 mg. twice daily, without adjusting previous anti-diabetic therapy. We obtained

Furthermore, many of these pairs had no family history of diabetes. We postulate two possible theories if this consubnial emergence is not the result of a high incidence of the disease: Firstly, that some article of foodstuff may be incriminated, especially in view of this almost simultaneous emergence; this we feel may possibly be the chronic ingestion of mustard oil (allylthiocyanate)¹⁷ which may conceivably come into the category of a 'thiol immobilizer'¹⁸ as it appeared to be in the 'epidemic dropsy' of Bengal.²⁵

most significant improvement of control in 7 patients, with complete clearing of glycosuria after about 5 days of treatment. It should be added, though, that glycosuria is seldom completely cleared even in 'well-controlled' Natal Indian diabetics. There was, of course, no change in dietary regimen during therapy. The serum cholesterol fell markedly in all patients and the uric acid decreased significantly in 7. These results in our very small series are interesting, and one wonders whether Mer 29 or a similar substance will not find a place in the treatment of diabetes, in particular in those syndromes (seen in the Natal Indians) in which we believe that the adrenal may be more than ordinarily implicated.

8. Uric-acid Studies

The Natal Indian suffers from a rather common and often very severe gout syndrome, and in view of the suggestion of Lazarow^{27,28} that an intermediate product of uric-acid metabolism may be diabetogenic, we attempted (after the manner of Herman, of Cape Town,²⁹ and Beckett and Lewis, of London³⁰), to see whether we could confirm their findings in Natal Indian diabetics. Herman noted a significantly high incidence of abnormal glucose tolerance both in gouty patients and patients who were hyperuricaemic without gout. Nine of 26 hyperuricaemic patients had raised fasting blood sugars — a proportion that fits in well with Herman's findings.²⁸ Of 16 clinically gouty patients, 10 had abnormal glucose-tolerance tests, using the criteria of Lee³⁰ and Remein *et al.*³¹

In a series of 174 Natal Indian diabetics (102 females and 72 males), 10.8% of the males and 2.9% of the females had serum uric-acid levels of over 6.0 mg. %. Mean serum uric-acid levels for the sexes in this series showed higher levels in the males (4.24 as to 3.62 mg.) and higher levels for the females (3.56 as to 3.24 mg.) as compared with the findings of Beckett and Lewis³⁰ in their very large series of 812 diabetic patients. Further analyses of these and several other of our findings are being conducted and will be reported in due course.

CONCLUSION

What then are the main findings that we feel have been arrived at by our 3 years' study of non-European diabetics in Durban?

Firstly it would appear obvious that we have probably more clinical material for original research upon diabetes in the dark-skinned races in the tropics and subtropics, than is generally realized. This is borne out by the growing interest in tropical diabetes, which will reach its culmination with the publication of Prof. J. Tulloch's monograph on *Tropical Medicine* in the near future.

Secondly, we have in the Natal Indian race a most interesting and significant group of young diabetics who, though they have the classical symptoms and presentation of diabetes, are not truly dependent on insulin even whilst pregnant; these we have called 'the insulin-independent young diabetics'. We should like to say that we agree most wholeheartedly with Professor Tulloch in the sentiments he recently expressed,²⁸ when he dealt the deathblow to the so-called 'J' type of diabetic.

Thirdly, the possibility that the adrenal glands may be more than ordinarily incriminated in the diabetic syndrome

in the Natal Indian is very exciting and merits further study.

Fourthly, will our very wide-scale use of the oral anti-diabetic substances stem the dreadful tide of diabetic vascular complications in the Natal Indian, to which, we believe, the unnecessary use of exogenous insulin may have contributed in the past?¹⁷

Fifthly, we can say with confidence, on the basis of our studies in the Durban African, that the rapidly advancing social and economic standards on the African continent will be particularly fruitful in regard to the emergence of diabetes.

Finally, we believe that our unique opportunity of studying large numbers of connubial diabetic pairs may help us to establish whether this may be due to the ingestion of a 'thiol immobilizer'¹⁸ or to the as yet uninvestigated possibility that parity may have an effect on diabetic emergence in the male, or whether it is simply a reflection of a very high incidence of diabetes in the Natal Indian.

I think it will be agreed when we end by saying that Durban, apart from its other obvious attractions, is a diabetologist's paradise. It is a great shame that, whilst overseas clinics are embarrassed by superfluity of staff and replete with research grants, we should be unable to exploit more fully the potentialities of our clinic because of overwhelming new registrations of diabetics and gross shortage of doctors.

We should like to acknowledge the kind permission of Dr. S. Disler, Medical Superintendent of King Edward VIII Hospital in Durban, to publish this paper. We are particularly grateful to the many consultants of the hospital who have referred their diabetics to our clinic. We thank Drs. J. Davidson, B. Brokensha, and Brian Gibb for their great help in the clinic.

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THYROID DISEASE IN AFRICANS AND INDIANS

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In the 5-year period, 1955 - 1959, 218 patients with thyroid disease were seen at King Edward VIII Hospital, Durban. A review of these cases indicates the pattern of the disease in the two racial groups seen in this hospital, and in particular the frequency of the more severe forms of thyroid disease, namely thyrotoxicosis and malignancy.

MATERIAL

The 218 patients include 125 Africans and 93 Indians, giving a hospital incidence of 0.07% and 0.25% respectively.

Sex. The sex ratio in Africans was 12.8 females to 1 male (116:9), and in Indians 6.2:1 (80:13).

Age. In both Indians and Africans the decade, 25-34 years of age, had the highest incidence of thyroid dis-

orders, with only slightly fewer in the decades 15-24 years and 35-44 years (Figs. 1 and 2).

Satisfactory histopathological diagnosis was obtained in 150 of the 218 cases, and firm clinical diagnosis alone

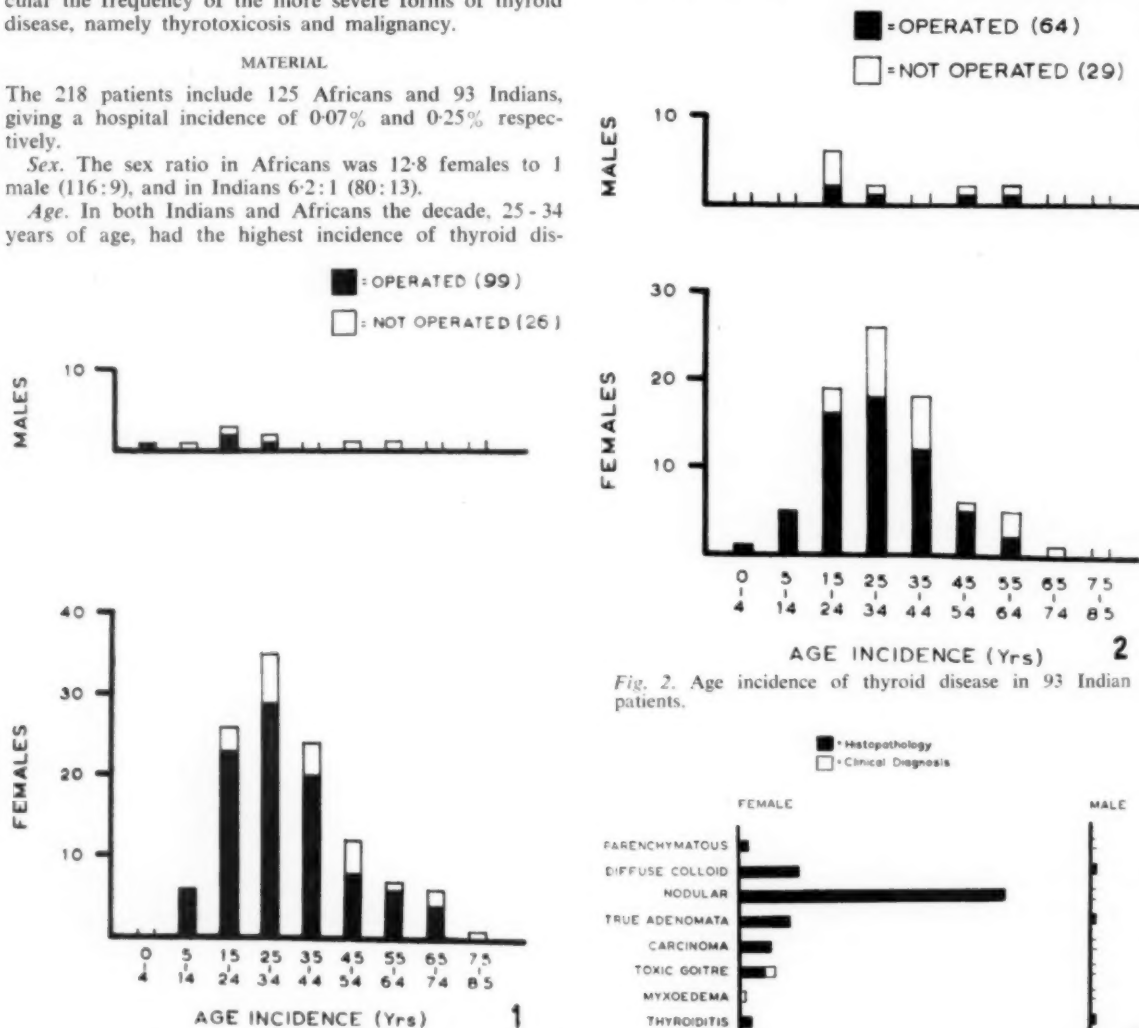


Fig. 1. Age incidence of thyroid disease in 125 African patients.

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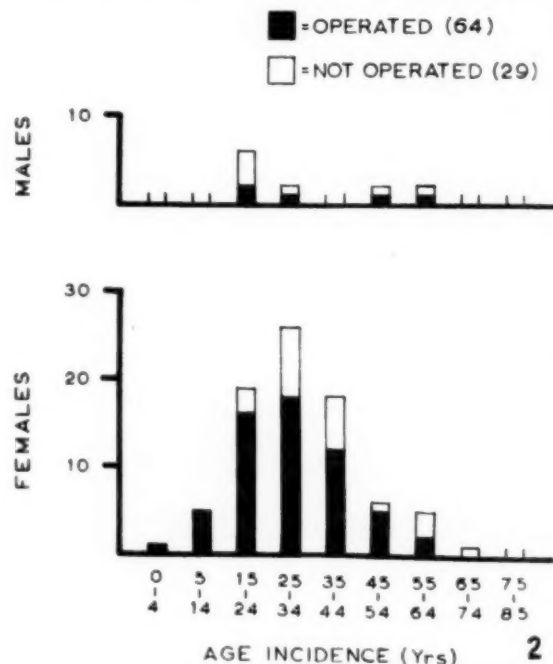


Fig. 2. Age incidence of thyroid disease in 93 Indian patients.

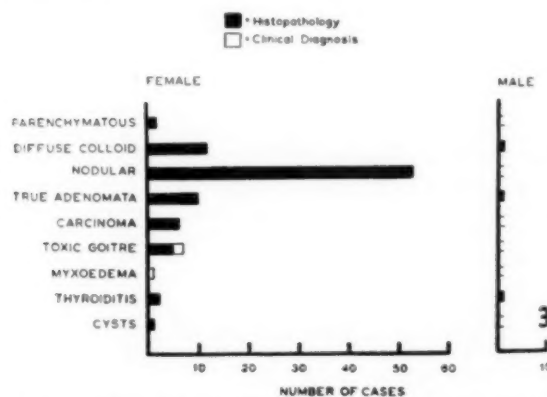


Fig. 3. Histopathological and clinical diagnosis in thyroid disease in the African patients.

in a further 15. Included in these are 5 cases with a necropsy or biopsy diagnosis. In the remaining 53 cases a clinical diagnosis of thyroid pathology was made; operation was carried out in 18 of this group, but no histology is available.

True adenomata were so classified when the histopathological picture presented as a well-circumscribed and encapsulated nodule, and when the histology showed

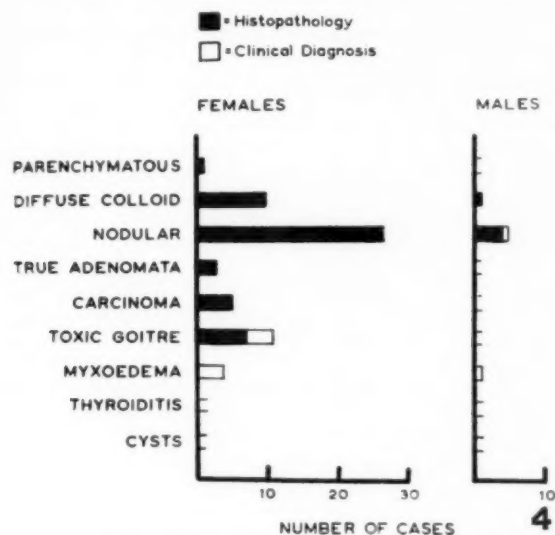


Fig. 4. Histopathological and clinical diagnosis in thyroid disease in the Indian patients.

structural changes different to the remainder of the gland (Table I, Figs. 3 and 4).

OPERATIVE TREATMENT AND COMPLICATIONS

The operations totalled 163 (Table II), one group of 93 in the Professorial Unit, and a group of 70 in other

TABLE I. DISTRIBUTION OF THYROID PATHOLOGY IN 165 CASES

		African		Indian	
		Female	Male	Female	Male
1. Non-toxic thyroid enlargement:					
	Parenchymatous ..	2	—	1	—
	Colloid ..	12	1	10	1
	Nodular ..	54	—	27	5
2. True adenomata ..		10	1	3	—
3. Carcinoma ..		6	—	5	—
4. Toxic thyroid enlargement ..		7	—	11	—
5. Myxoedema ..		1	—	4	—
6. Thyroiditis:					
	Hashimoto's ..	—	—	—	—
	Riedl's ..	—	—	—	—
	Acute purulent ..	2	1	—	—
7. Thyroid cyst ..		1	—	—	—

surgical firms. There were 2 deaths, none in the first group. One patient, an African woman of 37 years, had a subtotal thyroidectomy for a nodular goitre and died 11 days later from suppurative bronchopneumonia, demonstrated at autopsy. The other, an African woman of 59,

TABLE II. OPERATIVE TREATMENT

Pathology	African	Indian
Parenchymatous ..	2	1
Colloid ..	13	11
Nodular ..	54	31
True adenoma ..	11	3
Carcinoma ..	2	5
Toxicity ..	4	7
Cysts ..	1	—
No histology ..	12	6

had a subtotal thyroidectomy which was followed the same day by respiratory obstruction. An immediate tracheostomy was done, but the patient died on the fourth day. Autopsy showed gross pyelonephritis, atelectasis and glottic oedema.

Wound infections occurred in 20 patients (12%). These were usually minor, in the form of a stitch abscess, but in at least 2 patients major disruptions occurred. Haematomas or serous collections, either localized or involving the length of the incision, occurred in 15 patients (9%).

Recurrent nerve injury occurred in 3 of the second group of 70 patients who had operations. One occurred after a total thyroidectomy and another after total hemithyroidectomy. The lesions were unilateral and persisted until discharge from hospital. One nerve in each of 2 patients was injured in the first group of 93 patients, where both nerves are displayed as a routine at operation and immediate postoperative laryngoscopy is part of the procedure. Riddell⁹ has pointed out the need for expressing nerve injury not in terms of number of operations, but of the number of nerves at risk; his series revealed 2.1% of nerves at risk injured when the nerves were identified, and 3.5% in an equal number of patients when no identification was made. Hawe and Lothian⁵ reported 2.8% of nerve injuries in 1,011 patients with nerve identification, whereas Till¹¹ reported an injury rate of 10% (5.6% of nerves at risk). In the series of 93 cases here reported, 154 nerves were at risk, and the nerve damage was therefore 1.4%. Tetany was clinically apparent in 3 of the group of 93 patients. Two Indian women showed obvious signs, one following a total thyroidectomy for adenocarcinoma, and the other following a subtotal thyroidectomy for a large colloid goitre. The third, an African woman, had a very vascular nodular goitre extending retrosternally. Only the patient with carcinoma had persistent symptoms of tetany which required treatment.

DISCUSSION

The majority of patients seen at the hospital are drawn from Durban and its peri-urban areas; a number come from outlying districts and some from recognized endemic goitre areas in Natal.

The relatively low incidence of goitre among Africans is in all probability a reflection of the smaller number of Africans, proportionately, who come to hospital for painless swelling of the neck. Not uncommonly, young women with colloid or nodular goitre provide a history of one or more siblings at home similarly affected.

The majority of Indian patients with thyroid disease are from the Durban area or the coastal belt of the North Coast extending about 50 miles north and 20 miles inland.

In both racial groups, but particularly among Africans, men very seldom suffer from thyroid disease, and no cases of carcinoma or toxicity were seen in males.

Nodular Goitre

Nodular goitre is the commonest clinical manifestation, and the reasons for seeking medical help are usually swallowing or breathing difficulty. Many patients complain mainly of increasing swelling or recent increase in size, and X-ray shows considerable tracheal compression in many patients.

Retrosternal extension is surprisingly rare despite X-ray and operative search. In the only patient with such extension there was an entirely separate retrosternal nodule, 1 inch by 2 inches, with no connection other than fibrous tissue existing between it and the main nodular thyroid enlargement.

Thyrotoxicosis

There is no doubt that thyrotoxicosis is rare in Africans and only 7 cases have been seen in the 5-year period (Table III). The incidence is therefore 5.6% of all African thyroid admissions and 6% of the female thyroid admissions. In 2 cases the toxicity supervened on a multinodular

TABLE III. TOXIC AND MALIGNANT CHANGE

		Primary	Following nodular goitre	Total		
Toxicity	African	5	2	7	% of hospital admissions	{ 5.6% 12%
	Indian	8	3	11		
Carcinoma	African	2	4	6	% of operated cases	{ 6.0% 7.9%
	Indian	2	3	5		

goitre, but in 3 of the remainder the appearance was that of typical Grave's disease—a diffusely enlarged vascular gland. Of the 7 patients, 4 underwent subtotal thyroidectomy, 2 were treated medically, and 1 died in hospital without operation shortly after admission (Table IV).

TABLE IV. THYROID CARCINOMA IN AFRICANS AND INDIANS

	Age (years)	Length of history	Mass	Signs and symptoms	Treatment	Histology	Result
Africans:							
1.	72	5 years	Right lobe	Trachea compressed—1 cord paralysed	Thyroidectomy	Follicular adenocarcinoma	Discharged
2.	36	?	?	Paraplegia 1 month	Biopsy of vertebra	Functioning thyroid tissue	—
3.	69	20 years	Both lobes	Tracheal compression	Biopsy—no operation	Giant-cell carcinoma	Died—secondary in lungs
4.	85	1 year	Both lobes	Tracheal compression	No operation	Spindle-cell carcinoma	Died in hospital
5.	34	1 month	Both lobes	Mass in neck	Thyroidectomy	Papillary adenocarcinoma	Discharged
6.	60	8 months	Both lobes	Tracheal displacement	Node biopsy	Follicular adenocarcinoma	Discharged
Indians:							
1.	29	2 months	Left lobe	Mass in neck	Thyroidectomy	Papillary adenocarcinoma	Well 3 years later. Tetany
2.	46	22 years	Both lobes	Tracheal compression	Thyroidectomy	Follicular adenocarcinoma	Discharged. Cord lesion
3.	38	12 years	Right lobe	Mass, and secondary in skull	Thyroidectomy	Follicular adenocarcinoma	Discharged
4.	20	3 years	Both lobes	Tracheal displacement	Thyroidectomy	Follicular adenocarcinoma	Discharged
5.	5	2 years	Right lobe	Mass	Thyroidectomy	Papillary adenocarcinoma	Discharged

TABLE IV. THYROTOXICOSIS IN AFRICAN PATIENTS (1955-1959)

Age (years)	Thyroid gland
36	Multinodular
38	Diffuse enlargement
30	Multinodular
40	Diffuse enlargement
25	Necropsy—death from thyrotoxic myocarditis
43	Diffuse
17	? Diffuse
	Clinical diagnosis of toxic goitre—treated medically

Eleven Indian patients with thyrotoxicosis were seen, all women, a hospital incidence of 12% of thyroid disease and 13.7% of female thyroid admissions. Seven patients were operated on, the remaining 4 declining surgical treatment and being treated medically. Two women were 57 and 74 years old respectively, the 74-year-old patient being in cardiac failure. The remainder were 40 years and under, and 1 of these had a nodular goitre. Three of the 11 patients had nodular goitres, the remaining 8 presenting as primary thyrotoxicosis.

The figures presented in this series must be considered in the light of the relatively few African patients who come for treatment from endemic goitrous areas in Natal. The majority of these women do not attend if the only complaint is a cosmetic one. It is more probable that the patients with toxicity do come to hospital, and therefore the incidence of toxicity is, in all probability, artificially considerably higher in this hospital series than in others.

The same comments apply in lesser degree to Indian patients. The majority of these patients do come to hospital, even if only for reasons of deformity, and the figure of 12% incidence of toxicity is therefore a truer reflection.

Carcinoma

The incidence of carcinoma expressed as a proportion of thyroidectomies was 6.0% in Africans and 7.9% in Indians (6 of 99 and 5 of 64 cases respectively). All the patients were adult women with the exception of a young Indian girl (Table V).

In 4 of the 6 African women the carcinoma developed

in a thyroid which was the seat of long-standing disease involving both lobes in 3 cases (Table V); another patient being admitted for paraplegia following secondary spread to a vertebra, and not for the thyroid swelling. In 1 other case the history of a mass was short. Two of these 6 were in younger age groups (36 and 34 years), while the remainder were in people over 60 years. Three were well-differentiated tumours (2 in old people and 1 in a younger woman), 2 were poorly differentiated (both in older

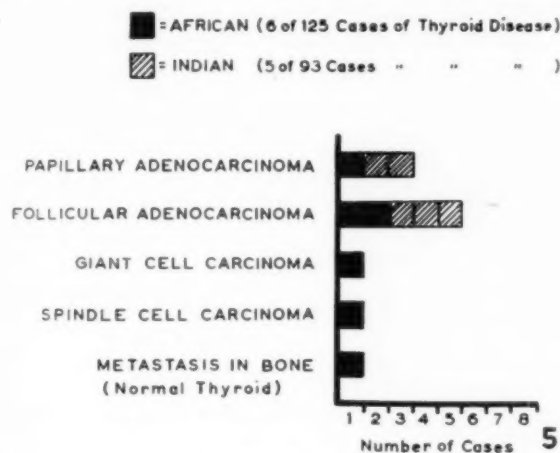


Fig. 5. Analysis of findings in the patients with thyroid carcinoma.

people), and in 1 case biopsy of the vertebra showed an area of functioning thyroid tissue (Fig. 5).

Of the 5 Indian females with carcinoma, 3 had a long history of thyroid enlargement; 1 only, a young woman of 29 years, having a history of a rapidly growing lump of 2 months' duration. So rapid was the growth that it had been incised as an abscess elsewhere. In 4 cases the women were young or middle-aged, and all had well-differentiated growths. The only child with the disease, an Indian girl of 5 years, had a single nodule removed 2 years previously which, histologically, was a papillary adenocarcinoma. Her parents refused further treatment, but 2 years later she was re-admitted and a total thyroidectomy was performed.

Postoperative follow-up has proved difficult in these patients, and only 1 Indian woman of 29 years, with a papillary adenocarcinoma, is regularly seen and is well 3 years after operation.

The incidence of thyroid carcinoma varies widely in the literature. The figures for all thyroidectomy cases in Hudson's series was 2.6%⁶ and in Cattell and Colcock's series 5.3%.¹ The incidence of carcinoma supervening on multinodular goitre varies more widely. Pemberton and Black,⁷ citing the extensive experience of the Mayo Clinic, found 3.8% of multinodular non-toxic goitres to have carcinoma on section—in these there was no previous clinical suspicion. Other reports give the following figures: 4.7%,⁶ 7.2%,² 9.1%,¹ 20%,¹⁰ and 60%.⁴ The incidence in the single nodule is generally regarded as

greater than in multinodular goitres. One major difficulty in assessing this incidence is that there is so frequently disagreement among several observers whether a thyroid gland has one or more nodules. Cope *et al.*³ found the incidence of carcinoma twice as great in clinical single nodules as in all nodular goitres. Other figures for single nodules are: 3.8%,⁶ 19%,⁸ 24%,² and 33.3%.¹

The sex incidence is generally given women: men, as 1:1 up to 40 years, and 2.5:1 after 40 years. In this hospital no male patients with carcinoma were seen during the period under review. Thus, the hospital incidence of carcinoma in both racial groups is 6% and 8% approximately, a figure not very different from those of the many reported series elsewhere. The incidence of carcinoma supervening on a multinodular goitre is, in Africans, 7.4% (4 of 54 operated cases), and in Indians, 9.7% (3 of 31 operated cases). These figures are higher than the true incidence, firstly because of those cases operated upon (18) where satisfactory histology was not available (some of which were probably nodular goitres) and, secondly, because of the small proportion of patients coming for cosmetic reasons alone. These figures refer to multinodular goitres, the occurrence of malignancy or toxicity in a single nodule being a rarity in this hospital.

Thyroid Abscess

Three patients with acute pyogenic abscess of the thyroid were seen, the patients being 2 African women and an African boy of 7 years.

The young boy had multiple abscesses in the buttock and leg. These, and a fluctuating abscess of the substance of the thyroid gland, were incised. The organism was a *B. coli*, and the condition settled following treatment with penicillin and streptomycin.

An African woman of 34 years had influenza 2 weeks before, followed by a sudden swelling of the thyroid. An abscess of the isthmus was aspirated, but no culture was obtained. The condition settled on penicillin treatment. The second African woman, 39 years old, had a swelling of the neck for 3 years. A sudden increase in size had occurred, causing difficulty in swallowing and breathing. Since the airway was obstructed a tracheostomy was done and the swelling, which appeared to be an inflammatory one, was explored. An abscess of the thyroid gland was evacuated, the organisms cultured being streptococci and pneumococci. Two months later, when the area had settled down, a partial thyroidectomy for nodular goitre was done.

Thyroiditis

No patients with chronic thyroiditis were seen and the clinical presentation of Hashimoto's and Riedel's disease appears to be rare in both racial groups.

SUMMARY

In this paper, 218 cases of thyroid disease in Indians and Africans are presented (125 African and 93 Indian). These represent a hospital incidence of 0.07% and 0.25% respectively, with a sex ratio of 12.8:1 and 6.2:1, women to men. The peak age incidence occurred in the decade 25-34 years.

In 93 personal cases there were no deaths, wound

infection was unpleasantly high (12%), recurrent nerve injury occurred in 2.1% (1.4% of the nerves at risk) of cases in which the nerves were displayed as a routine, and clinical tetany occurred in 3.2%, but persisted in only 1 patient.

Thyrotoxicosis is rare in Africans, but less so in Indians; a hospital incidence of 5.6% and 12% respectively is probably an artificially high figure. Approximately 3 of every 4 toxic cases in both races are primary, the remainder supervening on nodular goitre. All occurred in women.

The incidence of carcinoma is approximately 6% and 8% of operated cases among Africans and Indians respectively. In 4 of 6 Africans and 4 of the 5 Indian patients, the neoplasm occurred in a thyroid swelling of long standing. Only 1 child with carcinoma of the thyroid was seen, an Indian girl aged 5 years. The incidence of carcinoma in multinodular goitres was 7.4% in Africans and 9.7% in Indians. As with toxic goitre, the incidence of carcinoma

of the thyroid in this hospital is an artificially high one.

No accurate information is at present available on the advent of toxicity and neoplastic changes in single nodules. The relative infrequency of such nodules suggests that in Natal these 2 complications seldom occur in them.

Three cases of thyroid abscess are included, 1 occurring in a multinodular goitre which was later removed. No patients with Hashimoto's or Riedl's disease were seen.

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IRRATIONAL POLYPHARMACY IN ANAESTHESIA*

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The present age is an age of anxiety and tension that gives rise to psychosomatic disturbances with widespread manifestations of depression; hypertension; coronary disease; gastric, duodenal and intestinal ulceration; and hormonal disturbances.

In our contemporary world vast numbers of the population, because of the tempo and pressure of modern living, use some form of sedative, tranquillizer or anti-depressant drug. To these must be added antihypertensives, anticoagulants, antihistaminics, drug combinations containing amphetamine or its derivatives, and steroids.

Drugs cannot change the circumstances that are making life almost unbearable for so many people today and they cannot cure emotional illness, but they can reduce tension and help to restore morale. The whole medical profession has grown to realize that the wise and safe use of sedatives and antidepressives is one of the necessities of modern life.

This paper is presented to draw attention to the dangers to anaesthetized patients who have previously been subjected to one or more of the many forms of routine medical treatment or other forms of therapy, and to the dangers from drugs and combinations of drugs employed by the anaesthetist for pre-operative medication, during the course of anaesthesia, and in the postoperative phase.

Iatrogenic maladies and abnormal states, produced by physicians and surgeons and other therapists through various forms of treatment, have made it imperative to re-assess the action of commonly used anaesthetic agents. Psyche and soma are altered to such an extent by modern treatment that the physiology of anaesthesia will have to be rewritten. These abnormal clinical and physio-phar-

macological responses occur in anaesthetized patients who have had those induced maladies superimposed upon already existing pathological conditions.

Great care will have to be exercised in accepting findings from trials of new anaesthetic agents on animals and humans who have not been subjected to modern drugs which can cause iatrogenic disease. Anaesthetic drug trials on animals are undoubtedly an important aid in carrying out investigations, but it does not necessarily follow that findings in animals will be identical and capable of duplication in the anaesthetized human patients—especially in cases of patients previously exposed to therapy with dangerous potentialities.

Whenever a new anaesthetic agent is developed, the usual procedure is to study its pharmacological action in detail in animals, in biological laboratories. But animals subjected to these agents are usually free of organic or iatrogenic disease and, of course, have central nervous systems which are not identical with those of man. This method of investigation is certainly most valuable, but it must again be emphasized that it is fallacious to apply results so obtained without reservation to man, and take it for granted that identical phenomena and reactions will be duplicated in him.

When encouraging results are obtained from pharmacological investigations in animals, these are usually followed-up by clinical and pharmacological studies in man. But here, too, as has been pointed out in the case of animals, there are certain difficulties. There is, firstly, the unpredictable individual factor in man. Secondly there is the presence of organic disease which affects his physical and psychical state. Thirdly there is today the possibility of having had superimposed one or more of the so-called diseases of medical progress which can further disturb the already disturbed psyche and soma.

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TABLE 1. IATROGENIC DISEASES (SYNDROMES) — THEIR CAUSES AND ANAESTHETIC HAZARDS*

Diseases (syndromes)	Causes	Anaesthetic hazards
General syndromes		
Tracheo-bronchial infections	Prolonged antibiotic therapy resulting in resistant staphylococcal infection	Tracheal intubation might aggravate this condition. Unsterilized endotracheal tubes may introduce other pathogens
Prolonged, profound respiratory depression	Neomycin and streptomycin used intra-abdominally ⁹	Effect of prolonged curarization may be produced
Ano-rectal syndrome causing burning and melaena	Broad-spectrum antibiotics	The use of the rectal route for administration of anaesthetics or premedication may be blamed for the production of these syndromes
Neurologic disturbances (toxic mechanism results in paraesthesias) of hands, tongue and circumoral areas — may last a long time	Streptomycin and polymyxin	The anaesthetist may be held responsible for malposition of arms on the operating table — the use of airways, gags and packs may also be held to be the cause of these disturbances
Nephrotoxic effects	Streptomycin and neomycin	Kidney function is of vital concern to the anaesthetist. Every form of anaesthesia greatly reduces renal function — in fact operations requiring anaesthesia are of no avail in the presence of serious renal disease. Nephrotoxic effects from antibiotics must be taken into account
Penicillin reactions	Penicillin	Many anaesthetists are aware of dangerous reactions — sometimes fatal. Anaphylaxis and its danger must constantly be borne in mind. History is important before administration
Cardiovascular effects and arrhythmias		
Paroxysmal ventricular tachycardia	Digitalis Quinidine	Sixty per cent of all patients under general anaesthesia show arrhythmias by electrocardiography. These may become serious when superimposed upon arrhythmias of various types induced by drugs used in treatment
Paroxysmal tachycardia Ventricular fibrillation Cardiac arrest	Procainamide	
Premature contractions Central depression of vasomotor system	Rauwolfia alkaloids	Rauwolfia may drop pressure by 40 mm. or more and may produce nasal congestion; excessive bleeding may result from nasal intubation
Profound hypotension and arrhythmias	Chlorpromazine (tranquillizers)	
Arrhythmias	Thyroid drugs	
Angina pectoris Hypotension Myocardial infarction Cerebral vascular insufficiency	Anti-hypertensive drugs	Anti-hypertensive drugs should be stopped two weeks before operation. Surgery may even have to be postponed. Anti-hypertensive therapy represents a real hazard when associated with anaesthesia
Haemorrhagic infiltration of skin, subcutaneous tissues — necrosis, ulceration	Coumarin preparations	The coumarin preparations may be responsible for major bleeding during and after operations. Severe bleeding has taken place after dental extractions
Haematological effects		
Anti-granulocytic reactors	Phenylhydrazine, dinitrophenol, sulphonamides, antithyroid drugs (thiouracil), antibiotics (streptomycin), tranquillizers ('sparine', 'pacatal'), barbiturates	Interference with immunological processes
Anti-erythrocyte reactors	Sulphonamides, chloramphenicol, phenacetin, tranquillizers, (meprobamate)	One of the main obligations of the anaesthetist is to ensure adequate supply of oxygen to tissues of patients under anaesthesia. Under these circumstances there is real hazard
Anti-platelet reactors	Sedormid, sulphonamides, digoxin, etc.	Such a state of affairs is also hazardous for the anaesthetist

Diseases (syndromes)	Causes	Anaesthetic hazards	
Hepatic and gastro-intestinal diseases			
Jaundice from intra-hepatic obstruction	Chlorpromazine chlorothiazide 'diamox', etc.	Liver-function derangements are common in anaesthesia, but most anaesthetic agents, judiciously administered, produce minimal damage. In the presence of iatrogenic disease this may not be the case	
Hepatic coma			
Hormone-induced diseases			
Adrenal exhaustion syndrome	Cortisone	Steroid therapy induces adreno-cortical insufficiency, and patients so treated die of adrenal exhaustion during periods of stress such as surgery, anaesthesia, childbirth, accidents, etc. Hypotension out of all proportion to blood loss, respiratory depression, and delayed recovery may be the results of lack of care in handling such patients <i>N.B.</i> History must be elicited adequately before the operation; postoperative steroid therapy must be instituted in such cases	
Hypercorticism states and steroid withdrawal syndrome	Prednisone } Prednisolone }		pituitary inhibitors causing adrenal hypo-function
Thrombo-embolic complications			
Metabolic diseases			
Low-sodium syndromes	Powerful diuretics	Muscular cramps, nausea, drowsiness, and diminution in renal flow may result in uraemia. This is again an added anaesthetic hazard	
True iatrogenic plasma-sodium depletion	Low-sodium diets		
Syndromes of therapy			
Anaemias of surgery (a) Normocytic hypochromic anaemia (b) Megaloblastic anaemia	Gastric resection	All anaemias are a hazard for the anaesthetist. Oxygen-carrying capacity is diminished under these circumstances	
Radiation-therapy syndrome (poor tolerance and sensitivity of patients)	Radiation therapy	Patients exposed to radiation are very sensitive to cyclopropane anaesthesia and show marked respiratory depression at light levels of anaesthesia	
Citrate intoxication	Massive transfusions of citrated blood	Citrate intoxication manifested by a marked increase of venous pressure and cardiovascular failure	

* The above-mentioned list of iatrogenic diseases is by no means complete, but it serves to indicate how much greater responsibility the present-day anaesthetist has in carrying out his duties. It must be pointed out that although much of modern drug therapy is well-conceived and necessary, a great deal of ignorant, irrational, irresponsible, dangerous, and reckless polypharmacy is nevertheless practised.

TABLE II. COMBINATIONS OF DRUGS USED IN 11 CASES SELECTED AT RANDOM

Operation	Premedication	Duration of operation	Anaesthetic agents and drugs employed in the operating theatre
<i>Case 1</i> Dilatation and curettage	'Omnopon', gr. $\frac{1}{2}$ Scopolamine, gr. 1/150	10 min.	'Sodium pentothal' N ₂ O/O ₂ 'Trilene' Fluothane
<i>Case 2</i> Laparotomy	'Phenergan', 50 mg. } 'Carbrital', gr. 6 } Omnopon, gr. $\frac{1}{2}$ } Scopolamine, gr. 1/150 }	Night before 150 min.	Sodium pentothal 'Scoline' N ₂ O/O ₂ 'Leostesin' (1%), 30 ml. Fluothane, 2½ hrs. 'Methedrine', 1 ampoule
<i>Case 3</i> Gastrectomy	Omnopon, gr. $\frac{1}{2}$ Scopolamine, gr. 1/150	215 min.	Sodium pentothal Tubarine, 60 mg. N ₂ O/O ₂ Fluothane, 3 hrs. Atropine, gr. 1/100 'Prostigmin', 4 ampoules of 0.5 mg. each
<i>Case 4</i> Bilateral hernia	Omnopon, gr. $\frac{1}{2}$ Scopolamine, gr. 1/150 Phenergan, 50 mg. } Carbrital, gr. 3 }	45 min. <i>Nocte</i>	Sodium pentothal Scoline N ₂ O/O ₂ 'Flaxedil' 160 mg. Atropine (2 ampoules of gr. 1/100) Prostigmin, 2 ampoules of 0.5 mg. each Fluothane ? %

Operation	Premedication	Duration of operation	Anaesthetic agents and drugs employed in the operating theatre
<i>Case 5</i> Appendectomy	Omnopon, gr. $\frac{3}{8}$ Scopolamine, gr. 1/150	30 min.	Sodium pentothal N ₂ O/O ₂ Scoline Flaxedil Fluothane
<i>Case 6</i> Dental extraction	Omnopon, gr. $\frac{1}{4}$ Scopolamine, gr. 1/150	30 min.	Sodium pentothal Flaxedil, 80 mg. Fluothane N ₂ O/O ₂ Atropine, gr. 1/100 Prostigmin, 0.5 mg.
<i>Case 7</i> Laparotomy—appendectomy ..	Omnopon, gr. $\frac{3}{8}$ Scopolamine, gr. 1/150	55 min.	Sodium pentothal Tubarine, 15 mg. Flaxedil, 80 mg. Scoline Fluothane Atropine, gr. 1/100 Prostigmin, 2 ampoules of 0.5 mg. each 'Lethidrone', 2 ampoules
<i>Case 8</i> Haemorrhoidectomy	Phenergan, 50 mg. } Carbital, 6 gr. } Omnopon, gr. $\frac{3}{8}$ } Scopolamine, gr. 1/150 }	Nocte 35 min.	Sodium pentothal N ₂ O/O ₂ Fluothane 'Leostesin' (caudal) Adrenaline
<i>Case 9</i> Cystoscopy, fulguration	Omnopon, gr. $\frac{3}{8}$ Scopolamine, gr. 1/150	55 min.	Sodium pentothal Fluothane N ₂ O/O ₂ Flaxedil, ? mg. 'Valoid', 50 mg.
<i>Case 10</i> Prostatectomy	Omnopon, gr. $\frac{1}{4}$ Scopolamine, gr. 1/150	120 min.	Sodium pentothal Scoline Flaxedil Fluothane N ₂ O/O ₂ Methedrine, 2 ampoules Atropine Prostigmin
<i>Case 11</i> Rib resection and empyema drainage ..	Not stated	?	Sodium pentothal, 200 mg. Tubo-curarine chloride, 30 mg. N ₂ O/O ₂ , 50 : 50 Halothane, 1 % External cardiac massage 'Wyamine'

This widespread and often injudicious use of potentially harmful drugs — irrational polypharmacy as I have called it — makes the study of induced diseases of medical progress (iatrogenic diseases) one of continuing and dynamic interest to all anaesthetists and to all practitioners.

I have mentioned the high incidence of emotional illness in the population. The class of drugs to which has been given the name tranquillizers, sedatives, ataractics, central sympathetic suppressants, and calming or peace pills and potions, are used universally.

1. There are at least 100 brands of these drugs, each with a different trade name. It was estimated 5 years ago (1956) that £50 million worth of tranquillizers were sold

in one year in the USA.¹⁻³ The phenothiazine derivatives, of which chlorpromazine is the most commonly used, have a wide range of pharmacological action. A list of actions of chlorpromazine is most revealing, and many are of profound importance to the anaesthetist. Chlorpromazine has adrenergic-blocking, local anaesthetic, parasympatholytic, antipyretic, weak ganglion-blocking, antihistaminic, and quinidine-like actions. The drug is capable of producing allergy leading to dermatitis, jaundice, and agranulocytosis. On the central nervous system, low doses abolish parkinsonian tremor and large doses induce parkinsonism. It abolishes spasticity and tetany. It potentiates barbiturates powerfully. It abolishes conditioned reflexes, but not in-

born reflexes. Chlorpromazine quietens aggressive rhesus monkeys and prevents hyperthyroidism. Arousal reactions induced by stimulating the frontal hypothalamus or ascending reticular formation are suppressed; the EEG studies are compatible with this being the principal site of action. It is also a powerful anti-emetic.

2. Chlorpromazine effects have been studied in detail from the aspect of modifying the responses of patients to anaesthesia. Long-term treatment can prolong duration of narcotics and relaxants. There have been reports of prolonged apnoea, delayed return to consciousness, and also a marked potentiation of barbiturates.⁴ The commonest cardiovascular effects after the use of chlorpromazine are hypotension and tachycardia.

The widespread actions of the tranquillizers, as indicated above, and those of many other drugs and their common usage in vast numbers of the population, indicate how imperative it is for the anaesthetist to obtain a proper medical history from the patient. Has he taken or had prescribed any of these drugs for long or short intervals?

The approach to these patients for anaesthesia must be cautious. It is necessary to take the greatest care in administering tranquillizers in the pre-operative and post-operative phases, and during operative procedures. It is obvious that whatever anaesthesia is superimposed, due consideration must be given to the physiological aberrations which may have been induced previously and which, although not obvious in the conscious patient, can have disastrous effects in the anaesthetized (unconscious) patient.

It would be profitable at this juncture to list a number of iatrogenic diseases and their causes. Knowledge of these is vital to the anaesthetist (Table I).

Special anaesthetic care must be given to these patients because there may be serious consequences with possible mortality for which the anaesthetist might be held responsible, although in fact these may arise entirely from previously induced diseases.

Pre-anaesthetic Medication

Attention must now be directed to the dangers of polypharmacy in premedication of patients. These dangers arise not only because of superimposed iatrogenic disease, but from prescription of drugs by the anaesthetist which might profoundly influence the course of anaesthesia and the emergence from unconsciousness. Pre-anaesthetic medication must be planned with the entire picture of the patient, the operation, and anaesthesia in mind.

Few patients are so stoical that they do not need some mental block before operation. Enough has been said about tranquillizers in general to bar their use for pre-medication. Surely the best tranquillizer of all is the anaesthetist himself. In his pre-operative visits he can, by his art (this is still of paramount importance in the practice of anaesthesia), reassure and instil confidence into his patient without inducing morbidity. What can be less harmful than a suitable dose of scopolamine? What better amnesic is there? Furthermore, it is well known that many undesirable phenomena from reflex irritability are prevented by judicious atropinization; and sensory (pain) block may be assisted or enhanced by the administration of a preparation of the total alkaloids of opium now

obtainable with a component which selectively antagonizes the respiratory depression caused by morphine. These simple innocuous measures should be sufficient for adequate and safe pre-operative medication.

Unfortunately the practice of prescribing combinations of drugs is now the vogue. There are dangers in using many of these drugs even singly, and in combinations it must be quite impossible to ascertain or assess the benefits or detriments of any one drug in the combination.

A perusal of patients' treatment charts (Table II) reveals that many patients receive a tranquillizer, e.g. chlorpromazine, 50 mg., combined with a large dose of a barbiturate, the night before operation. On the morning of the operation, one hour or an hour and a half before operation, they receive 'omnupon', 1/3 gr., with scopolamine, 1/150 gr. It has been proved⁵ that sympatheticotonic drug action (by use of vasopressors) may be completely annulled when even small doses of chlorpromazine have been administered pre-operatively or during operation. Moreover, the tranquillizers have a powerful potentiating action on barbiturates. This exemplifies the irrational and potentially dangerous polypharmacy in the pre-operative phase.

Polypharmacy During Anaesthesia

New anaesthetic agents and new techniques are constantly being introduced. They come in rapid succession and even simultaneously, and claims which are often extravagant are made for these new agents with reference to their safety and potency. Each agent is said to have advantages over others and even over those which have stood the test of time.

Production of the state of anaesthesia is a complex process, and the exact mode of action of anaesthetic agents in order to produce anaesthesia is still undetermined. The ideal agent has yet to be elaborated. Physiological trespass occurs with every administration, and, although much has been done to reduce mortality, morbidity remains incalculable and may persist for a considerable period—sometimes for a life-time! Cardiac arrest has become a frequent occurrence. The anaesthetist is a clinical physiologist, but it becomes impossible for him to gauge accurately the clinical status of the anaesthetized patient when a multitude of anaesthetic agents are used simultaneously. The frequency of this practice can readily be seen by referring to operating theatre registers. These reveal a kind of polypharmacy which is responsible for serious morbidity and even deaths. It is not surprising that cardiac arrest is on the increase.

The human body was never designed for such assault, and much less is it able to tolerate such treatment when there is some pathological process present.

There seems to be a widespread belief that each ingredient in this potpourri has a selective site of action on specific organs or systems and leaves others unscathed. No account is taken of, nor is it known, what effects individual agents have on each other in combination, or what happens to the body as a whole when it is subjected to such combinations.

The position, of course, becomes even more complicated when there is not only organic disease present, but also superimposed iatrogenic disease.

In view of this it has, for instance, become necessary to develop a special technique of pre-anaesthetic preparation and anaesthetic management for patients who have been treated for long periods by anti-hypertensive drugs.⁶ The method is based on the pharmacological action and the subsequent haemodynamic effect of the various anti-hypertensive agents. Not only are new multiple anaesthetic agents used, but the anaesthetist is persuaded to use drugs which derange even further, and even abolish, many of the vital compensatory mechanisms of the body. I refer here to the widespread use of the hypotensive ganglion-blocking drugs, which are so freely used in the operating theatres. They are used mostly to promote surgical facility, very often in trivial surgical procedures and very often without the anaesthetist being fully aware of the possible dangers and morbidity to which he exposes his patient. The patient for surgery who has had previous therapy which influences the course of anaesthesia; for whom multi-ingredient type of pre-medication has been prescribed; and to whom a combination of anaesthetic agents is administered, and then has superimposed a drug to induce purposeful hypotension, has certainly been exposed to grave danger. This is dangerous irrational polypharmacy and cannot be condemned too strongly. The information in Table I exemplifies what is very common practice among anaesthetists in certain parts of this country. It may be even worse elsewhere.

It will be seen from this random selection of 10 cases (Table II) (the eleventh was published in a recent issue of the *Journal*) that 'methedrine' was administered to cases 2 and 10; 30 mg. to the latter. Case 7 received 2 ampoules of 'lethidrone'. Case 9 received with his cocktail, presumably to prevent a hangover or in anticipation of one, a substance called 'valoid' (anti-emetic). Case 11 was classic. The patient received a potent conglomeration which induced respiratory and cardiac arrest. External cardiac massage was instituted and with this was combined a potent vasopressor. Many of the above patients with such sequences must have been on the verge of dissolution, and one of these certainly had the luckiest escape from death imaginable!⁸

Polypharmacy in the Postoperative Phase

There is no necessity for the anaesthetist, apart from prescribing for the relief of pain, to indulge in polypharmacy. He is, of course, in this phase an important member of the team and must concern himself with others in the treatment of postoperative shock and other untoward complications arising from anaesthesia and surgery.

Shock

In connection with the treatment of shock, attention must be drawn to the danger of noradrenaline infusion — especially its prolonged use. This much vaunted treatment has resulted from time to time in extensive, severe gangrenous ulceration. There should be little use, during anaesthesia or in the postoperative phase, of vasopressors

of any kind, especially where rational anaesthetic techniques are employed and where combinations of drugs whose actions are unpredictable are avoided.

Vomiting

The incidence of vomiting in the postoperative phase has diminished greatly since anaesthetic techniques have improved and since the volatile anaesthetic agents like ether, chloroform, and trichlorethylene are not in such common use. Nevertheless, vomiting can be a most unpleasant sequel. The aetiology of vomiting is extremely complex and there may be a multiplicity of causes. It may arise from, but only very infrequently, a psychic factor, but it is quite unwarranted to prescribe as a prophylactic or therapeutic measure some form of tranquillizer in every case. This again is irrational because in the vast majority of cases vomiting results from manipulation or cutting of abdominal viscera or from gastric irritation of drugs. As nature's way of excretion of toxins, it may thus be beneficial. If vomiting becomes severe and results in dehydration and electrolyte disturbance, treatment should be carried out by parental administration of appropriate solutions to restore electrolyte balance to normal. This is a much more physiological approach and certainly less harmful than to resort to tranquillizers with anti-emetic action, but with potential dangers of causing profound hypotension.

SUMMARY

1. Attention is drawn to the widespread use of drugs and drug combinations (polypharmacy) which induce iatrogenic disease. The anaesthetist must be cognizant of the manifestations of these conditions.

2. Dangers to anaesthetized patients suffering from diseases of medical progress are stressed because of completely altered physiological and pharmacological reactions in these patients to anaesthetic drugs.

3. Attention is drawn to the fact that patients are exposed to danger not only from irrational polypharmacy practised by physicians generally, but also by anaesthetists in the pre-operative, operative, and postoperative phases.

In conclusion I should like to plead for a 'puristic' outlook in anaesthetic practice, i.e. one opposed to the employment of multiple drugs by the anaesthetist. This is especially the case when patients, even before the administration of an anaesthetic, are disrupted psychologically and physiologically, not only by the stresses and strains of modern life, but also by iatrogenic disease.

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PYOGENIC SPINAL EPIDURAL ABSCESS

WITH NOTES ON 5 CASES

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This communication deals with one form of pyogenic spinal epidural inflammation, 5 cases of which have been encountered since 1958. The syndrome is not very common and has received somewhat scanty attention even in specialized journals; the diagnosis is usually made late because practitioners do not think of it. Delay in recognition tends to be followed by permanent, serious, crippling disability, which could have been avoided if surgical drainage had been instituted at an earlier stage in the progress of the disease. An analysis of the findings and results in the 5 cases to be reported is given in Table I.

CASE REPORTS

Case 1 (1958)

A White male, aged 22 years, began to complain of pain over the back and loin 2 days after a rugby match. Ten days later he was unable to move his lower limbs. Mild pyrexia was noted. Lumbar puncture was now performed. The fluid contained 300 mg. of protein per 100 ml. Culture of the fluid yielded no growth of micro-organisms. After another 2 days, i.e. 14 days after the onset of pain, the patient was referred for neurosurgical opinion. He looked desperately ill, with mental confusion and a temperature of 104° F. There was flaccid paralysis of both lower limbs and loss of sensory discrimination below the level of T2. He was sweating profusely and erythema was noted from the level of T2 down. Continuous bladder drainage had been instituted.

Cisternal myelography revealed a complete obstruction at the T2 level. Laminectomy was performed and pus was encountered over 3 vertebral segments. The pathologist reported growth of *Staphylococcus pyogenes* from the pus.

Progress. Despite drainage and antibiotic treatment, there was no improvement of his paralysis or sensation. The patient died of ascending urinary infection 11 months after the onset of his illness.

Case 2 (1959)

A White male, aged 49 years, experienced backache after lifting a heavy weight. A few days later pain radiated down the legs. He was admitted to hospital 7 days after the onset of his illness. Pyrexia was recorded. Lumbar puncture showed no abnormality in hydrodynamics. Examination of the fluid showed no abnormality. Five days later the patient was unable to move his legs or pass urine. Two days after this, lumbar puncture was repeated, with the intention of performing myelography. Pus was encountered and the examination was suspended.

He was now, 14 days after the onset of his illness and 2 days after the appearance of paralysis, referred for neurosurgical opinion. There was high fever and profuse sweating. The patient looked desperately ill. Immediate operation was performed and pus was evacuated at the levels L3-5. The pathologist reported *Staphylococcus pyogenes* in the pus.

Progress. The operation wound broke down and had to be opened widely to permit free drainage of pus. Power returned to the lower limbs; 1 year later there was mild residual bladder weakness, slight weakness in dorsiflexion of both feet and depressed sensation over the sacral saddle area.

Case 3 (1959)

A White male, aged 41 years, had complained of severe backache and crural pain for 2 weeks, which failed to respond to bed rest and traction. Exploration for prolapsed intervertebral disc protrusion was carried out by an orthopaedic surgeon, who found no such lesion. Twelve days after the operation the wound discharged serous fluid, from which *Staphylococcus*

pyogenes was isolated. Treatment by repeated aspiration and 'chloromycetin' was instituted.

The patient's condition deteriorated and 5 weeks after his operation he was referred for neurosurgical opinion. Examination showed marked weakness of both lower limbs and straight-leg raising was limited to 25° on both sides. There was patchy depression of sensory discrimination on both sides in dermatomes from L4 down. The wound had healed, but pressure elicited tenderness deep to it, with an impression of underlying oedema.

Cisternal myelography showed a complete hold-up of the opaque column at L4. At operation a large epidural abscess was evacuated.

Progress. The wound was closed and healed by primary union. Power slowly returned to the lower limbs, but 1 year later the patient still used a stick when walking to assist weakness of the right foot. He still suffered a great deal of pain.

Case 4 (1961)

A White male, aged 29 years, was stung by a bee on the left index finger, which became septic. He was given a course of penicillin and the inflammation in the finger subsided. Two weeks later he developed backache, headache, and pain in both legs. He was admitted to hospital and a lumbar puncture was performed. Analysis of the cerebrospinal fluid showed 300 mg. of protein per 100 ml., and 80 cells per c.mm., predominantly polymorphs.

Neurosurgical opinion was then sought. The temperature was 103.6° F., and he was sweating profusely, with a generalized flush over the body, more marked over the lower half. There was tenderness over the upper lumbar spine. The erector spini muscles were in spasm. There was weakness of the legs and patchy depression of sensation below L2 on both sides. Tendon reflexes were depressed in the lower limbs and absent at the right knee, and there was slight difficulty in micturition. A cisternal myelogram demonstrated a block at L2 (Fig. 1). An emergency operation was carried out and pus was evacuated from this site. *Staphylococcus pyogenes* was reported in the pus.

Progress. Complete neurological recovery, but his wound broke down and required wide open drainage.

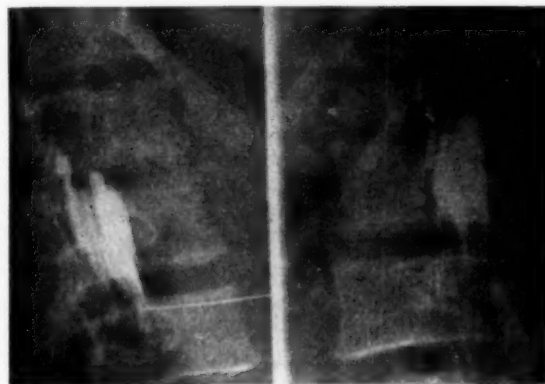


Fig. 1. Myelogram in case 4, showing obstruction at about the level of the third lumbar vertebra. The 'bundle of faggots' appearance is striking. It will be noted that the examination was carried out via the cisternal route

Case 5 (1961)

A White male, aged 48 years, complained of backache for 2 weeks. During this time he was febrile, became constipated and had difficulty in micturition. He had been given a course of penicillin for furunculosis immediately before the onset. He became paralysed 2 weeks after the backache began, and developed acute retention of urine.

Cerebrospinal fluid: Queckenstedt's test showed obstruction; protein—537 mg. per 100 ml., with globulin in excess; 1 lymphocyte per c.mm.

Myelogram—Block at T7. Neurosurgical opinion was requested at this stage and an emergency laminectomy was performed on the 17th day after onset of symptoms and 3 days after paralysis had set in.

At operation epidural pus was evacuated at T7. *Staphylococcus pyogenes* was reported in the pus.

Progress. The wound broke down and had to be laid open. Marked residual weakness of legs 4 months after admission to hospital, but the patient could walk with assistance. His bladder recovered completely.

SOME OTHER SERIES

In 1926, Dandy¹ redirected attention to non-tuberculous inflammatory lesions in the spinal epidural space, then collectively named peri-pachymeningitis after the suggestion made by Ducheck in 1853, or pachymeningitis externa, a term introduced at a later date. It appears that Albers, in Germany, had first reported an acute infection of the epidural space in 1833. Dandy quoted from a bibliography on this subject assembled by Kaminski in 1917. From the aetiological viewpoint, 2 sets of cases had been described—those in which the epidural spinal space had been involved by extension from infection in adjacent areas; and those arising from known, apparent or inferred infections at a distance. Cases fell into 2 categories—acute infections (abscesses), primary or metastatic; and inflammatory tumours (no abscess). Furthermore, a number of chronic inflammatory infections of the spinal dura and epidural tissues had been described.¹

Since Dandy's article, a number of other authors have dealt more specifically with spinal epidural pyogenic infections. A few readily available references provide a key to the literature concerning these lesions. The most important facts emerging from these various studies are best emphasized by quoting from Heusner,² who added 20 cases to the 225 reviewed by Rankin and Flothow in 1946:

'Non-tuberculous spinal epidural infections are infrequent disorders that merit periodic reconsideration by the profession at large because of the heavy responsibility accruing to the practitioner who first visits a patient thus afflicted. Final diagnosis and definitive treatment of these infections are now regarded as functions of specialists, but the decisive factor in the outcome of most cases is the celerity with which the first attending physician suspects the probable nature of the ailment and summons expert aid. Thus, early diagnosis leading to prompt surgical intervention is regularly rewarded by total recovery. On the other hand, even brief delay of operation can vitiate all subsequent efforts to avert permanent paraplegia or quadriplegia with an attending loss of control over bladder and bowel . . .'

In 1954, Hulme and Dott³ mentioned 25 patients with spinal epidural suppuration treated in the neurosurgical departments at Edinburgh and Bristol between 1933 and 1954. Over the last 4 years of this period 6 such patients had been treated in Bristol, where, during the same time,

21 patients with spinal tumour had been treated. These authors found that the introduction of the sulphonamide drugs and antibiotics had dramatically influenced the earlier frequent fatal outcome of acute and subacute cases, whether treated by surgical operation or not, but the urgent need for operation to prevent serious disabling effects had not been reduced.

In 1960, Dus⁴ once again reiterated the main lesson. Successful treatment depends on early diagnosis of a process usually seen by the surgeon as a complication of suppuration in another part of the body, or by the internist as causing vague abdominal or thoracic pain. Extensive laminectomy performed early in the course of the disease, with removal of pus and proliferated tissue, plus treatment with antibiotics, transforms an almost hopeless prognosis into a hopeful one.⁴

DISCUSSION

Pyogenic spinal epidural abscess follows infection and inflammation which may arise in several ways. It may come about from direct introduction of infection by surgical operation, as presumably occurred in case 3, or lumbar puncture (as previously encountered by one of us). As far as we have been able to find, it has not been specifically mentioned in connection with the penetrating wounds of accident or mayhem. It may arise from vertebral osteomyelitis, as reported and reviewed by Allbrook.⁵ Lastly, the epidural space is one of a number of obscure places where blood-borne infection may settle.⁶ In cases 1 and 2 in our series it would seem that a haematoma in this region had become infected, while in cases 4 and 5 there was a recognizable primary source of blood-borne infection.

From references mentioned, it appears that the lesion affects the sexes in similar proportions, and has been reported at ages from 4 years⁷ to 86 years.¹

It has been stated that, because the dorsal extradural space is only potential in the cervical and upper dorsal regions, spinal epidural abscess is especially rare in these parts.⁵ In general terms, the lesion may be looked upon as an acute phlegmon in the epidural fat, which is abundant posteriorly, but practically non-existent anteriorly, since the dura mater is in contact with the posterior longitudinal ligament anteriorly. The accumulation of pus anteriorly may indicate that it is associated with acute osteitis of the body of the vertebra. The ligamentum flavum forms a limiting structure posteriorly and is responsible for ready spread of the infection up and down the spine.

The dura mater forms an effective barrier against spread to the leptomeninges, and therefore a septic meningitis is hardly ever seen. It follows that the cell count in the cerebrospinal fluid may be negligible or moderately raised. When a block develops the protein increases.

The inflammatory process in the epidural fat probably involves branches of blood vessels which are responsible for the segmental blood supply of the spinal cord (Adamkiewicz), and this may militate against complete recovery, even after timely drainage of pus. The fact does, nevertheless, remain that if the pus is evacuated before or soon after the onset of cord signs, the chances of recovery are greater. Myelograms, which for obvious

TABLE I. ANALYSIS OF CASES IN PRESENT SERIES

Case no.	Age (yrs.)	Sex	Trauma	Primary focus	Myelogram	Duration of symptoms before operation	Neurological status at time of operation	CSF	Organism	End result
1	22	M	? Rugby	—	Positive T2	14 days	Paraplegia	Protein 300 mg. % Cell count not done	Staph. pyogenes	Died 11 months later from ascending urinary infection
2	49	M	Acute back strain	—	Not done	14 days	Paraplegia	—	Staph. pyogenes	Recovered (95%); slight residual weakness of ankles
3	41	M	—	Introduced by previous operation	Positive L5, S1	35 days	Severe degree of paresis of muscles and bladder and depression of sensation in S3, 4 and 5	—	Staph. pyogenes	Slight degree of weakness of muscles and bladder
4	29	M	—	Septic finger	Positive L2	16 days	Root signs. Slight weakness of legs and depression of sensation	Protein 300 mg. % 80 cells, P>L*	Staph. pyogenes	Recovered fully
5	48	M	—	Furunculosis	Positive T7	17 days	Paraplegia	Protein 537 mg. % Globulin in excess. One lymphocyte	Staph. pyogenes	Partial recovery; walks with aid of stick

* Here P=polymorphs, L=lymphocytes

reasons should usually be carried out *via* the cisternal route, do show evidence of complete obstruction (Fig. 1).

The clinical syndrome in these cases tends to follow a pattern in which 4 phases can be recognized: that of spinal ache; that of root pain; that of weakness of voluntary muscles, sphincters and sensibility; and that of paralysis.² During the early phases there is some degree of pyrexia. We have noted erythema of the body below the level of obstruction in 4 of our 5 patients, most pronounced in case 1. There was none in case 5. It would appear that this erythema arises from an effect upon the sympathetic outflow along the nerve-roots.

For various reasons the epidural phlegmon may be confused with the Guillain-Barré syndrome, poliomyelitis, acute disc protrusion, acute back strain, ascending paralysis, meningitis, perinephric or subphrenic abscess, retrocaecal appendicitis, dissecting aortic aneurysm, or pulmonary lesions.

The earlier the diagnosis is made, the greater the chances of instituting drainage of the pus and consequently the more hopeful the chances of recovery of locomotion, sphincter control and sensation.

Appropriate antibiotic treatment must accompany, but cannot replace, adequate surgical drainage. Although

primary closure of the surgical wound is sometimes followed by primary union, it is preferable to leave the wound open to permit continued drainage from its depths, thus avoiding break-down and the tedious drainage of pockets of pus under a re-entrant angle.

SUMMARY AND CONCLUSIONS

Five cases of pyogenic (staphylococcal) spinal epidural abscess have been briefly described. A few series reported by other authors and some views of these authors have been mentioned. The aetiology, pathology, clinical picture and treatment of the phlegmon have been commented upon.

Pyogenic spinal epidural abscess presents an urgent problem calling for speedy diagnosis and early surgical drainage.

We thank Dr. H. R. J. Wannenburgh, Medical Superintendent of Wentworth Hospital, and Dr. J. V. Tanchel, Medical Superintendent of Addington Hospital, for permission to publish these 5 cases.

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THE AFRICAN CHILD

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George Bernard Shaw in his wisdom said that the worst sin towards our fellow creatures is not to hate them, but to be indifferent to them. In my reflections of the past 14 years on the life of the African child as seen at King Edward VIII Hospital, there is much to narrate, and I wonder whether we have not been indifferent to the requirements of this section of our community. The African population was not hospital conscious 14 years ago, and our estimation of the medical problems was consequently very inadequate. During the past 8 years, and particularly in the last 3 or 4 years, the demand for hospitalization has been very intense. Let us review the

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general improvements in medical science during this period.

Many discoveries of great importance in diagnosis and therapy have been made, e.g. the introduction of penicillin and a large group of antibiotics, many of which have reduced the hazards of a long illness and actually saved life. Another revolution in our daily lives has been the advent of poliomyelitis vaccine, which has received universal acclaim and has been equitably distributed throughout our multiracial society. The repair of congenital heart lesions, almost a forbidden territory to surgeons some years ago, has become an essential part of the thoracic surgeon's duties today. The geophysical year has brought us into contact with the moon, and meaning-

less space and sound no longer baffle modern scientists. Since the last war the welfare state of Britain has focused its greatest attention on the child and, during its most difficult moments, allocation of food for children was of paramount importance. This aspect of preventive work has been of great value to the citizens of Britain.

Kwashiorkor

With regard to the problem of child care as it affects this country, malnutrition has been studied seriously for the past 14 years or so. During this time kwashiorkor, or protein deficiency, has reached astronomical figures, and its rise has been particularly great during the past 4 years.

What are the factors that cause this devastation of the African child? While ignorance concerning feeding undoubtedly plays a certain part, social and economic circumstances are also responsible for the end results which manifest themselves in the disease known as kwashiorkor. Kwashiorkor exists on the whole of the African continent, and the original name, derived from Nigeria, means the 'deposed child' because, when a mother becomes pregnant again and removes her infant from the breast, this 'deposed child' then suffers from protein deficiency, since the proteins necessary for the child's health are to be found in milk. Deficiency of these proteins causes oedema of the face, body and limbs; enlargement of the liver; hair changes giving a gingery or grey appearance; and denudation of the skin of the body, particularly in the lower abdomen and buttocks. Eye symptoms, ranging from destruction of the eye to blindness; anaemia; and a host of other symptoms are also present. In practically all these cases the monotonous diet has consisted of mealie-meal porridge and water, samp, bread, and occasionally beans, with no other nutriment, and very little in the way of fresh food.

The disease presents from 6 months to 2, 3 or 4 years of age, and there is a general deterioration of every organ of the body, resulting in an abnormal being, one who has to be nurtured back to life at considerable expense. The most important age group affected is the preschool one, when supply of milk is absolutely essential. This milk can be prescribed as skimmed-milk powder, and the cost of providing this food for an infant would

not amount to more than 5 cents a day, whereas the estimated cost for a child with a full-blown kwashiorkor, who requires blood transfusions and hospitalization, amounts to R90 a month. A random group of statistics from King Edward VIII Hospital for 1955-1956 is given in Table I.

To deal with this very vexed question, the basic requirements of the African must be closely studied and, as Prof. O. P. E. Horwood of the University of Natal has stated, the African's salary must amount to at least R30 a month for a meagre existence. Statistics show that many are living under the R18-R22 level and are unable to obtain the necessary food to keep kwashiorkor at bay. Many of the children affected with kwashiorkor are prone to develop other infectious diseases, such as dysentery, typhoid and tuberculosis. Therefore it is in the best interests of all children that this group is kept in a good nutritional state, so that these diseases may not be spread throughout the community. We should be cognizant of the fact that health is interdependent—one half of the community depends on the good health of the other half for its survival. In the *South African Medical Journal* of 21 October 1950¹ I reviewed the position of malnutrition at that time and stated that 'the problem is too large for other than governmental control, particularly in urban areas where conditions of living among the Bantu have deteriorated owing to congestion and increased cost of living. All our researches will prove fruitless unless the problem is tackled vigorously and energetically. The preservation of good health must prove less expensive than treatment of the disease. Prevention is better than treatment'.

Since 1950 the problem has increased considerably. What active steps have we taken to educate and improve the lot of the African, and are we not perhaps allowing the position to overreach itself? Before this happens let us adjust our thinking and invoke the aid of the 3 tiers of Government, Municipal, and Provincial authorities to help surmount the problem.

May King Edward VIII Hospital in its Jubilee year rejoice in the results achieved by milk as a therapeutic agent at all the outpatient clinics under its control.

My thoughts end with these apt words: 'In each one of us stands this instinct pointing with its upraised finger the path we have to walk in. We may call it love of freedom, or justice, but neither quite defines it, it is something more; it is the deep conviction buried somewhere in our nature not to be eradicated that man is a great and important thing, that the right of himself and his existence is the incontestable property of all men; and above all the conviction that not only we have a right and are bound to preserve it for ourselves, but that where we come in contact with others we are bound to implant it in them'.

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TABLE I. COMPARISON OF STATISTICS RELATING TO KWASHIORKOR AND ALL OTHER FORMS OF MALNUTRITION, KING EDWARD VIII HOSPITAL, 1955-1956

		Admissions	Deaths
Kwashiorkor	1955	731	392
	1956	834	429
Total		1,565	821
All other forms of malnutrition	1955	283	189
	1956	175	90
Total		458	279

SICKLE-CELL TRAIT IN THE NATAL INDIAN

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Population surveys on the incidence of the sickle-cell trait have been undertaken among the South African Bantu¹ and the Cape Coloured. Esrachowitz *et al.*² found an incidence of 0.58% in a series of 1,555 cases in Cape Coloured persons and Griffiths (quoted by Grek and Findlay³) found only 2 positive cases out of 600 African patients in Johannesburg. In addition Altmann⁴ found only 1 case of the sickle-cell trait among 403 South African Bantu patients.

So far very little information has been published concerning the incidence of either sickle-cell disease or the sickle-cell trait in the South African Indian,⁵ although both conditions are recorded in India.⁶ Lehmann and Cutbush⁷ reported an incidence of 3.3-30% in the aboriginal communities of Southern India. Following the admission of 5 patients with sickle-cell anaemia (2 from the same family) to King Edward VIII Hospital during the past 4 years, it was decided that the incidence of the sickle-cell trait in the South African Indian in Natal should be investigated.

MATERIAL AND METHODS

A survey was carried out on 1,000 Indian patients admitted to the various wards of this hospital from September 1960 to April 1961. The blood samples were taken from blood sent for routine haematological investigation, without previous knowledge of the age, sex, clinical condition or haematological picture of the patient. The following investigations were performed:

1. In all cases, 1 drop of whole blood was treated on a slide with 1 drop of 2% sodium metabisulphite, sealed with a cover slip, incubated at 37° C., and examined microscopically 6 hours and 24 hours later.

2. In those cases where sickling was demonstrated, blood was sent for haemoglobin electrophoresis⁸ and alkali denaturation.⁹

RESULTS

Of the 1,000 patients, 10 showed a variable amount of sickling within 24 hours by the sealed cover-slip method.

Paper electrophoresis showed a combination of haemoglobin A with haemoglobin S. The 1-minute alkali denaturation showed, in all cases, that less than 2% of the haemoglobin was resistant to KOH treatment.

The patients were then investigated and in no case was the admission to hospital attributable to a haematological disorder.

SUMMARY

In a survey of 1,000 South African Indian patients admitted to King Edward VIII Hospital, the incidence of the sickle-cell trait was found to be 1%.

We should like to thank Dr. S. M. Joubert for performing the electrophoresis and foetal haemoglobin estimations; and Profs. E. B. Adams and H. L. Wallace of the Departments of Medicine and Paediatrics, and Dr. S. Disler, Medical Superintendent of King Edward VIII Hospital, for permission to mention the cases.

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SOME THOUGHTS ON INTERN TRAINING

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The present-day medical curriculum is so heavy and exhaustive that it places an appalling burden on the medical student. A period of 5 years appears to be too short to acquire more than the barest essentials in medicine. Teachers in medicine experience great difficulty in maintaining a high standard of medical education without overburdening the student or lagging behind a rapidly advancing science.

Time being such an important factor in medical training, it is surprising to note that the internship period, in many instances, is not used to greater advantage to augment medical training which may have been inadequate

during undergraduate years. The internship period could be most useful in polishing medical training to a nicety. There is urgent need to explore this important year with reference to its educational value and training possibilities.

The South African Medical and Dental Council introduced the compulsory internship year precisely for the purpose of training young graduates in the practice of medicine. There is therefore nothing new in the plea made in this article. Moreover, many hospitals offer intern training which, fundamentally, incorporates the points raised, and in this review I hope only to create awareness and lay emphasis on aspects which may not be uniformly

practised. Furthermore, the inculcation of certain attitudes and principles in the practice of medicine are so important in the formative years that this is worthy of consideration.

Owing to the shortage of interns, lack of finance and other factors, more importance is placed on the service value and labour of the intern. Even in the best institutions this attitude robs a young doctor of one of the most valuable periods of training in his whole career.

The internship year represents a period which bridges the gap between undergraduate and postgraduate education, and for the first time introduces to the doctor essential techniques in investigative and research programmes. It is a period of consolidation when the theoretical knowledge acquired during the undergraduate years should be put to practical use. The morass of facts and figures 'crammed' for the examinations is now systematized and reviewed critically in the light of actual experience with patients and disease.

Shortcomings in Intern Training

An intern has the opportunity of seeing patients in totality, rather than seeing diseases in people. He looks after the total needs of the patient in terms of his illness, his employment, his family, his anxieties, his problems, etc. In short, he is given an opportunity for responsible management of all the complex human problems in patients. This is in keeping with the highest ideal and duty of the intern and doctor, viz. responsibility for the total care of the patient. Unfortunately, since interns are not given sufficient guidance and supervision in this regard, this human side of medicine is neglected and the young doctor leaves the hospital with a considerable gap in his knowledge concerning a very fundamental aspect of medicine.

In many hospitals conditions of internship leave much to be desired. There is no organized training, no supervision and no guidance. The intern is suddenly given heavy responsibilities with which he is unable to cope. He is given far too much to do, with the result that he does things in a slipshod fashion with the primary intent of doing the minimum amount of work to meet the requirements, and perhaps the satisfaction, of his seniors. He loses interest in his work. He has no time to learn, no intention of taking stock of things. He is too busy, too tired, too harassed and too irritable. He is virtually made to hate his work.

What are the circumstances that place an intern in this unfortunate position? He has far too many patients under his care, too many admissions to contend with daily, too many seniors to be responsible to, too many outpatient and casualty responsibilities, too many investigations to do and too many ward rounds each day on the same patients. Because of this high pressure, he loses all interest in his work, and looks and schemes for as many off-duty times as possible. Under these circumstances, his efficiency is obviously below par. This unfortunate state of affairs is all too common and a complete reorganization is long overdue.

Possible Improvements

Fundamentally, the training of interns devolves round what the intern expects in the way of training which will

prepare him adequately to practise medicine; and what is expected of him during his period of training. It should be realized that internship is more than just a period in which a young graduate clerk patients, takes blood samples or administers intravenous fluids. The intern should not be regarded as just an extra pair of hands to relieve the heavy service responsibility of a hospital. This internship period should be made into a recognized institution for polishing the training of doctors. The educational value of this period should be fully exploited, and a great deal of thought and enterprise is needed in organizing this training. The training should be well planned and there should be supervision and guidance throughout this period. Hospitals should have certain minimum requirements before they are recognized for internship training, so that there is some uniformity in this training.

At the beginning of their period of internship, interns should be given talks on the conduct and organization of their work. These should be followed by discussions on clerking of patients, ideas on writing letters to doctors and employers, the proper way of writing medical certificates, and the whole gamut of the clerical aspect of medicine. This unfortunately is not taught or emphasized adequately, with the result that the intern's performance is rather poor in this regard and he possibly carries this deficiency with him throughout his medical career.

Tutorials and discussions on the treatment of diseases can be valuable, especially if these are conducted with reference to patients in the ward. Interns are highly amenable to education and very receptive to learning, since medicine is fresh in their minds and they are not plagued by the fear of examinations. They therefore require careful guidance and assistance in their efforts at consolidation.

Ward procedures are done in only one way, and that is properly. These can only be done properly if interns are given the 'know-how' *ab initio*. It is pathetic to see senior medical officers struggling to take blood simply because they have not been properly taught. In surgical practice interns are trained to perform minor surgical procedures, the emphasis always being on general principles. Basic training in performing correct incisions, stitching, opening abscesses, etc. are so important and yet these are sorely neglected.

The South African Medical and Dental Council has wisely introduced a compulsory period of training in anaesthetics, and interns are expected to administer 50 anaesthetics under supervision. As with all compulsory regulations there is a danger that interns may regard this as yet another hurdle to overcome as soon as possible in order to qualify for registration. This attitude is particularly likely to occur if no definite time is allocated for this training. Furthermore, benefit can only be obtained when an organized course is conducted with expert instruction.

Meetings and Research

The intern is encouraged to attend all postgraduate ward rounds, clinical meetings, lectures, and clinicopathological conferences. He should be given an opportunity to participate in some of these activities. He should be allowed to prepare and present cases at postgraduate rounds and

clinical meetings. All problem cases and deaths should be discussed at length by the unit staff, the intern being the chief participant. Each death merits a clinicopathological conference in its own right, where the cause of death, avoidable factors, diagnosis, treatment and future management of similar cases are discussed.

A journal club is a most useful institution for a unit to conduct. The journals are reviewed by the senior members of the staff. The intern has an opportunity of acquiring new knowledge, and is trained to be critical and not to be misled by exaggerated claims and enthusiastic predictions. There is no reason why an intern cannot participate in research. Small projects which are carried out may break the monotony of routine work, stimulate interest, and pave the way for an outlook of research and investigation, so that challenging situations can be tackled appropriately when they arise.

IDEAL REQUIREMENTS

Ideal requirements are not necessarily impractical and it is opportune to discuss them at this juncture. An intern should be placed in charge of about 25 beds. There should be one registrar and one consultant in charge of these same beds. This simple scheme obviates the necessity of unnecessary and duplicated ward rounds. The same registrar and consultant may have other beds, but this would not affect the intern. Since he is ultimately responsible for the total care of his patients, he needs to be resident in hospital and has to be on duty 24 hours a day and 7 days a week.

Casualty and outpatient work is not the responsibility of the intern. He is not in a position to make major decisions with regard to admissions and outpatient treatment and, moreover, such duties remove him from his own patients who are his primary concern. He cares for patients admitted to his beds only. He is expected to do a limited amount of his own investigations, such as haemoglobin estimations, erythrocyte sedimentation rates, urine testing, etc. He should also be given the opportunity of doing other investigations at least a few times so that he familiarizes himself with the principles and methods involved, discovers the difficulties and observes errors that may be encountered. These more advanced procedures are naturally carried out under expert supervision.

Duty to the Patient

The above scheme would allow the intern to be fully occupied and yet not necessarily overworked. Since he is still in the formative period of his training, the maxim that duty to the patient takes priority over all other duties should be firmly ingrained in his mind. Routine off-duty times should not be encouraged at this stage. In any event, he needs to be near at hand all the time. He is the only person who knows his patients well. He is therefore in an excellent position to observe the progress made by each of them. He also knows which of his patients are critically or seriously ill and need special care and constant observation. Very often, relieving doctors, who are not familiar with the patients of their colleagues, and are in any event too busy with their own work, are not in a position to care for patients who require special attention. Interns should therefore look after their own patients at all times.

A few hours off duty can be granted once or twice a week if the circumstances in the ward permit.

Regular attendance by the intern provides the opportunity to follow the progress of the patient closely and to anticipate or observe, personally, certain known complications in susceptible patients, such as pulmonary embolus, pulmonary oedema, myocardial infarction, postoperative complications, etc. Much can be learnt from keen observation of these events, provided the intern is on the spot to observe, examine, diagnose and treat these complications as they arise and to apply himself to these problems intelligently. He is also in an excellent position to observe the natural history of diseases and to see how they deviate from the normal.

Naturally, he needs to record regularly the progress made by each patient. If patients are examined regularly and critically and progress notes are accurately recorded, then many conditions initially undiagnosed will unfold themselves, or misdiagnosis will soon become evident. The intern is taught to take nothing for granted and every sign and symptom new or old is subjected to searching scrutiny. Progress of the patient should be noted throughout the course of his illness, even after discharge from hospital when he is seen at a follow-up clinic. The intern sees these patients under proper supervision and guidance.

Duty to the Hospital Staff

Apart from the very important responsibility of care to his patients, the intern owes much responsibility to his consultant, his registrar, the nursing staff, clerical staff and medical auxiliaries. In presenting cases to the consultant, he should know their details well enough to speak from memory, rather than to fumble through piles of notes. The symptoms, physical signs and special investigations should all be presented without recourse to the bed chart. Furthermore, all new developments, complaints and complications should be known and readily forthcoming at the opportune moment. Case presentations should be short and to the point, without missing important items, and at the same time not burdening the consultant with unnecessary details. The consultant's comments should be accurately recorded in the notes.

Responsibility to the nursing staff is unfortunately not well appreciated. Common courtesy and kindness should be observed at all times. No doctor should enter the ward without first greeting the sister or staff nurse in charge, and obtaining her permission to enter the ward. Orders should not be given to junior nurses. All errors of omission and commission should be brought to the notice of the sister in a gracious, but firm, manner, and not in the presence of patients. Constant teaching of nurses is most important, especially at times when mistakes are made. The whole attitude and demeanour of the intern should be such as to gain the respect and confidence of the nurses and patients.

Ward Rounds

The ward round conducted by the intern is probably the most difficult and strenuous part of his duties, and yet it is not given the attention it deserves. Regular and carefully planned ward rounds are necessary for a reasonable practice of medicine. Each patient should be given an

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opportunity to put forward any complaints he may have or to express his progress and well-being. It is well worth listening to patients' 'troubles', even if they become irrelevant or garrulous. They need someone to listen to their problems, and the intern should display patience and wisdom at these moments.

Moreover, each patient expects to be and should be examined, even if it just means placing a stethoscope on the chest. This is good for the morale of the patients. Relevant points are recorded in the progress notes. Chronically ill patients who are particularly liable to develop certain complications such as hypostatic pneumonia, pressure sores, contractures, wasting of muscles, etc. should be carefully examined, not only to exclude the presence of these complications, but more important still, to prevent their occurrence.

Treatment and Observation

No ward round is complete, no matter how painstaking and thorough, unless treatment received by each patient is checked. It is a good rule to prescribe something for patients where the diagnosis is uncertain and they are still being investigated. This is not so much a placebo as something to satisfy their motivation and desire to be given attention and be treated. After all, when patients consult a doctor, they surrender themselves to him, seeking an immediate eradication of their anxieties, worries and ills. The prescription will depend on the type of patient, the nature of his disease, his emotional poise and the degree of rapport between doctor and patient. The initial prescription may accordingly be an explanation of his illness, reassurance, health education, pills, mixtures, injections, etc.

In checking treatment, careful attention should be given to what has been prescribed, what the patient is actually receiving, the length of time the patient has received a particular drug, the choice of the drug, etc. If careful note is not taken of these points, then haphazard and blunderbuss therapy is encouraged. Furthermore, patients may not receive the treatment prescribed, and if this is not discovered in good time, then disaster may befall the patient. On the other hand, some patients receive drugs, particularly antibiotics, for unnecessarily long periods simply because their treatment is not checked regularly. These drugs are not only expensive, but may also prove toxic, and therefore should not be given for longer than is necessary. When a drug is to be stopped it is not sufficient to write the instruction on the treatment chart or to remind the staff nurse. To be absolutely certain that the patient will not receive any more of the drug in question, it is necessary to write the word 'Stop' boldly across the treat-

ment sheet, so that there is no question of it not being stopped.

Observation charts recorded by nurses are well worth regular scrutiny. The progress of the patient and future plan of therapy are dependent on the evidence presented in the charts; they therefore need to be accurate. Particular attention should be paid to temperature charts, intake-output charts, weight of the patient and regular urine testing. Some of these observations may have to be made by the intern, especially if diagnosis or the day-to-day plan of therapy are entirely dependent on these observations. For example, a suspicion of acute nephritis can be confirmed immediately if the specific gravity of the urine is above 1025. Weight loss may be an early sign of response to treatment in acute nephritis. Similarly, weight gain may be the first warning that a patient in acute renal failure is receiving too much fluid.

Nothing should be taken for granted in medicine. The nursing aspect should not be overlooked in any ward round, for even though a brilliant diagnosis be made, the patient may still suffer if treatment is not given as prescribed. A ward round every night is not only advisable, but essential. Patients receiving intravenous infusions should have their calculated intake clearly set out for the nurses to follow. Better still, intravenous infusions should be discontinued at night, if possible, so that the patient can have a restful night. Anxious, restless and violent patients, and patients in congestive cardiac failure, who are particularly liable to develop pulmonary oedema, should be appropriately sedated. Pre-operative and postoperative patients should also be well sedated.

This account may sound too idealistic and be considered to be the thoughts of a perfectionist who has no regard for practical matters. Yet all I have suggested is within the scope of most hospitals and can be effectively practised by those who have much concern with the training of doctors.

SUMMARY

Some thoughts on intern training are presented. The educational value of the internship period is emphasized and the need for proper facilities for organized training is stressed. The South African Medical and Dental Council has created this period for training doctors and it should therefore be fully exploited. All aspects of internship training should be conducted so that the young graduate goes about his work under proper supervision and guidance. There is urgent need for reappraisal of the internship year.

I am indebted to Dr. S. Disler and Prof. E. B. Adams for their helpful criticism.

PASSING EVENTS : IN DIE VERBYGAAN

Drs. M. H. Finlayson, H. W. Clegg, A. S. Peden, P. W. J. Bosman and H. Rifkin, pathologists, have changed their address to 922 Medical Centre, Cape Town. The telephone number remains 2-7521.

South African Geriatric Society (M.A.S.A.). There will be a meeting of this Society on Thursday 7 December 1961 at 8.15 p.m. in the A-floor Lecture Theatre, Groote Schuur Hospital,

Observatory, Cape. Drs. R. Lang and S. Stein will speak on 'Skin conditions in the aged', and Dr. J. K. de Kock will speak on 'Eye conditions in the old'. All doctors who are interested are welcome to attend this meeting.

South African Paediatric Association (M.A.S.A.), Cape Town Sub-Group. The next meeting of this Sub-group will be held on Tuesday 5 December 1961 in the Lecture Theatre, Red

Cross War Memorial Children's Hospital, Rondebosch, at 8.15 p.m. Dr. H. Gordon will speak on 'Population explosion'. All those interested are welcome to attend this meeting.

Medical Superintendent. The Board of the Gippsland Base Hospital at Sale, Victoria, Australia, is seeking a medical superintendent. Any practitioner who may be interested should contact Mr. R. Lester Almond, 706 Lister Buildings, Johannesburg, for further details.

Southern Transvaal Sub-Group of Neurologists, Psychiatrists and Neuro-Surgeons. On Wednesday 13 December 1961 a symposium on 'Impotence' will be held at Medical House, Esselen Street, Johannesburg, at 8 p.m. The speakers will be Drs. E. Abro, A. Sidley, and S. Lopis. Dr. C. Subitz will be in the chair.

Maurice Weinbren Award in Radiology. This Award consists of a Certificate and a prize of R50, and is made annually for a published paper of sufficient merit dealing either with radiodiagnosis or radiotherapy. Authors who wish to be considered for this Award must communicate with the Hon. Secretary of the Selection Committee, Dr. H. A. Shapiro, P.O. Box 1010, Johannesburg.

Edenvale Hospital, Johannesburg, Clinical Meeting. The next clinical meeting will be held on Wednesday 13 December at 8 p.m. in the Board Room. Dr. A. M. Porter will speak on 'Impressions of the International Congress of Obstetrics and Gynaecology in Vienna, September 1961'; and Mr. I. Norwich will speak on 'Impressions of a recent Surgical Congress in Dublin' and 'A visit to Russia' which will be illustrated by coloured slides. Visitors will be welcome.

OFFICIAL ANNOUNCEMENT : AMPTELIKE AANKONDIGING

TARIFF OF FEES FOR APPROVED MEDICAL AID SOCIETIES

At its recent meeting, the Federal Council approved of the following amendments to the Tariff of Fees.

These amendments and provisions become effective from 1 December 1961.

L. M. Marchand
Associate Secretary

28 Plaza Buildings
Pretoria
20 November 1961

1. General Preamble

Paragraph 7: The words 'those Societies' at the end of the paragraph have been deleted and substituted by the words 'all Societies approved by the Association'.

The Council laid down that not only should a medical practitioner not differentiate between which members of a society he will treat at tariff rates and which not, but once he accepts the preferential tariff it should apply to all the members of all the societies approved by the Association.

2. Pathology

The times stipulated in subsections N (Cape) and O (Tvl.) have been changed to:

Monday - Friday 7 p.m. - 7 a.m.	} plus 50%
Saturday 1 p.m. - Monday 7 a.m.	
Public holidays	

3. Travelling Expenses

Council has ruled that a medical practitioner should not charge mileage fees for postoperative visits to a patient in hospital.

4. Extension of the Tariff

Council has agreed that the Tariff which is applicable to certain persons for whose medical attention the Government is responsible, shall also be applicable in cases of medical treatment rendered to persons in police custody.

This provision shall apply to prisoners who have already been sentenced and are detained at police stations instead of in a gaol, as well as to prisoners awaiting trial who are in gaol, but are taken ill there and have to go to hospital. The last-named are handed over again by the Department of Prisons to the South African Police and the Police Department is responsible for their treatment.

TARIEF VIR GOEDGEKEURDE MEDIESE HULPVERENIGINGS

Op sy jongste vergadering het die Federale Raad die volgende wysigings in die Tariefboek goedgekeur.

Hierdie wysigings en bepalings tree in werking vanaf 1 Desember 1961.

L. M. Marchand
Medesekretaris

Plaza-gebou 28
Pretoria
20 November 1961

1. Algemene Inleiding

Paragraaf 7: Die woorde 'those Societies' aan die end van die paragraaf word geskrap en deur die woorde 'all Societies approved by the Association' vervang.

Die Raad het neergelê dat nie alleen moet 'n geneesheer nie onderskei tussen watter lede van 'n hulpvereniging hy teen die voorkeurtarief sal behandel en watter nie, maar as hy die voorkeurtarief aanvaar hy dit moet toepas op al die lede van al die hulpverenigings wat deur die Vereniging goedgekeur is.

2. Patologie

Die tye in subseksies N (Kaap) en O (Tvl.) word verander na:

Maandag - Vrydag 7 nm. - 7 vm.	} plus 50%
Saterdag 1 nm. - Maandag 7 vm.	
Openbare vakansiedae	

3. Reiskoste

Die Raad het neergelê dat 'n geneesheer nie reiskoste moet vra vir na-operatiewe besoeke aan 'n pasiënt in 'n hospitaal nie.

4. Uitbreiding van Tarief

Die Raad het goedgekeur dat die tarief wat van toepassing is op sekere persone vir wie se mediese behandeling die Regering verantwoordelik is ook van toepassing sal wees op behandeling van persone wat in polisiebewaring is.

Hierdie bepaling sal geld vir prisoniers wat alreeds gevonniss is en by polisieostasies aangehou word i.p.v. in 'n tronk, sowel as op gehoorafwagendes wat in 'n tronk is maar daar siek word en na 'n hospitaal moet gaan. Laasgenoemdes word deur die Gevangeniswee weer aan die S.A. Polisie oorhandig en die Polisie departement is vir hulle behandeling verantwoordelik.

BOOKS RECEIVED : BOEKE ONTVANG

Art and the Scientist. By Geoffrey Lapage, M.A., M.Sc., M.D., M.Inst.Biol. Pp. xii + 115. 18 illustrations, 22 Plates, including 8 in colour. R4.20. Bristol: John Wright and Sons Ltd. 1961.

Clinical Neurosurgery. Proceedings of the Congress of Neurological Surgeons, Miami Beach, Florida, 1959. Pp. xvi + 278. Illustrated. R9.60. Postage — 27½c. London: Baillière, Tindall and Cox, 1961.

Pharmaceutical Advertising. A Survey of Existing Legislation. Offprint from International Digest of Health Legislation, 1961, vol. 12, No. 1. Pp. 53. 35c. Pretoria: Van Schaik's Bookstore (Pty.) Ltd. 1961.

Basic Nursing Education Programmes. A Guide to their Planning. By Katherine Lyman. World Health Organization Public Health Papers No. 7. Pp. 81. 50c. Pretoria: Van Schaik's Bookstore (Pty.) Ltd. 1961.

PHARMACEUTICAL NEWS : FARMASEUTIESE NUUS

SQUIBB MEDICAL FILMS

Squibb Laboratories (Pty.) Ltd. of Isando, Transvaal, announce the addition of the following medical films to their film library:

- '...and the Earth Shall Give Back Life'
- 'Cancer — The Problem of Early Diagnosis'
- 'Congenital Anomalies of the Heart'
- 'Oral Diuretics in Clinical Medicine'
- 'Physiology of the Natural and Synthetic Adrenal Steroids'
- 'The Valiant Heart'
- 'The Problem of Gastro-intestinal Cancer'

Squibb films are available for private or group showings as a service to the medical profession. Films may be obtained by getting in touch with any local Squibb representative or by writing direct to the Film Department, Squibb Laboratories (Pty.) Ltd., P.O. Box 48, Isando, Transvaal.

MYSTECLIN-V

Squibb Laboratories announce that Mysteclin-V, the Squibb broad-spectrum antibiotic now costs patients less; prices are down more than 20%.

For 'built-in' safety, Mysteclin-V combines tetracycline phosphate complex — the most widely used broad-spectrum antibiotic and Mycostatin — the first safe antifungal antibiotic. Tetracycline phosphate complex provides superior initial tetracycline blood levels, assuring fast transport of adequate tetracycline to the site of infection. Mycostatin has specific antimicrobial activity. By preventing the overgrowth of monilia so often seen in patients taking broad-spectrum antibiotics, Mysteclin-V offers a high degree of freedom from annoying side-effects such as diarrhoea, pruritus, vaginitis and oral thrush.

Available in convenient dosage forms, capsules 250 mg., syrup 30 c.c. and 60 c.c., and 10 c.c. paediatric drops, Mysteclin-V offers low cost, safe and effective tetracycline therapy.

NEW PREPARATIONS AND APPLIANCES : NUWE PREPARATE EN TOESTELLE

TRESCATYL SUPPOSITORIES

Maybaker (S.A.) (Pty.) Ltd. announce the introduction of Trescatyl brand suppositories, and supply the following information:

Description. Trescatyl suppositories each contain 500 mg. ethionamide and are supplied in boxes of 5 and 50 suppositories. Trescatyl is indicated for the treatment of pulmonary tuberculosis in patients for whom 2 or more of the standard anti-tuberculous drugs are unsuitable because of the presence of drug-resistant organisms or other contraindications. The suppository presentation has been made available in order to overcome or avoid gastric intolerance of ethionamide when administered orally. It is intended that the suppositories should be used only to supplement the maximum tolerated oral dosage.

In patients who can tolerate a maximum of 500 mg. ethionamide by the oral route, it is suggested that this quantity is supplemented by the rectal administration of one suppository daily. In patients who can tolerate only 250 mg. per day, the addition of 2 suppositories daily is suggested.

Further information is obtainable from Maybaker (S.A.) (Pty.) Ltd., P.O. Box 1130, Port Elizabeth.

RESOTREN COMPOSITUM

FBA Pharmaceuticals (S.A.) (Pty.) Ltd. announce the introduction of Resotren Comp., a new specific treatment for intestinal and extra-intestinal amoebiasis.

Composition. Each tablet contains: Resotren (molecular compound of chloroquine + iodo-hydroxyquinoline sulphate) 75 mg., resochin (chloroquine diphosphate) 200 mg., di-iodo-hydroxyquinoline 300 mg.

THE SOUTH AFRICAN SURGICAL TRADE ASSOCIATION

The following firms belong to the South African Surgical Trade Association, whose aim is to maintain a high ethical code amongst its members:

- African Oxygen Limited
- Barford & Jones Surgical Supply Company
- British General Electric Company Limited
- Clinical Emergencies (Pty.) Limited
- Glaxo-Allenburys (S.A.) (Pty.) Limited
- Gurr Surgical Instruments (Pty.) Limited
- Stuart M. L. Hatrick (Pty.) Limited
- The Hearing Centre
- Frank Hellawell & Company
- A. H. Hodges & Company (Pty.) Limited
- Horne & Platow (Pty.) Limited
- H. E. Lewy
- Frederick C. Marcus
- Medical Distributors (Pty.) Limited
- Medical Electric
- Petersen Limited
- Protea Holdings Limited
- E. J. Reed (Pty.) Limited
- Safety & Medical Equipment (Pty.) Limited
- Selquip (Pty.) Limited
- South African General Electric Company (Pty.) Limited
- South African Philips (Pty.) Limited
- Surgical & Medical Supplies (Pty.) Limited
- Chas. F. Thackray (S.A.) (Pty.) Limited
- Tract Aids (Pty.) Limited
- Vernon & Co. (S.A.) (Pty.) Limited
- Zenith Medical & Surgical Instruments (Pty.) Limited

Indications. All forms of acute and chronic, intestinal and extra-intestinal amoebic infections; non-specific dysenteric conditions; and prophylactic protection against amoebic infections and malaria. Di-iodo-hydroxyquinoline and iodo-hydroxyquinoline sulphate are both well known as effective intraluminal amoebicides, whereas chloroquine acts as a systemic amoebicide *via* the bloodstream, potentiating the action of the former.

Dosage. In mild infections adults take 1 tablet 3 times daily after meals, in severe infections 2 tablets 3 times daily. Children take correspondingly less.

Side-effects. Resotren Comp. has no laxative effect. With the recommended doses no side-effects are to be anticipated. Overdosage may give rise to lassitude, blurred vision and in rare cases hypersensitive skin reactions. All such symptoms disappear when treatment is suspended or dosage is reduced.

Presentation. Resotren Comp. is available in tubes of 20 tablets and bottles of 300.

Further information is obtainable from FBA Pharmaceuticals (S.A.) (Pty.) Ltd., P.O. Box 10233, Johannesburg.

EQUANIL L-A TABLETS

Wyeth Laboratories (Pty.) Ltd., announce the introduction of Equanil L-A Tablets (meprobamate prolonged-release tablets) an alternative dosage form of familiar Equanil, and supply the following information:

When the calming, tension-relaxing benefits of tranquillization with Equanil must be sustained, uninterrupted, over a prolonged period of time, this new long-acting dosage form offers ease and simplicity of administration. Each continuous-release tablet contains 400 mg. meprobamate made up into

specially-coated granules, in a form from which the drug is released over a period of 10-12 hours.

Dosage. The average adult daily dose is 1 tablet (400 mg.) twice a day, although a dosage range up to 2 tablets twice a day may be required in certain patients. Doses above 2,400 mg. daily are not recommended.

Contraindications. Patients taking meprobamate should be warned that their tolerance to alcohol may be lowered, with resultant slowing of reaction time and impairment of judgement and coordination.

Presentation. Bottles of 25.

Further information is obtainable from Wyeth Laboratories (Pty.) Ltd., P.O. Box 42, Isando, Tvl.

CORRESPONDENCE : BRIEWERUBRIEK

MICRO-ORGANISMS RESPONSIBLE FOR PELVIC INFECTION

To the Editor: The instructive article on the above subject by Dr. Holtzhausen¹ has been brought to my notice, with reference to the antibiotic treatment recommended.

In his conclusions, the writer advocates a routine combination of chloramphenicol and kanamycin in severe pelvic infections where bacterial cultures are not possible, or while awaiting the results of cultures.

As an otologist, I feel strongly that routine use of kanamycin, like streptomycin—both known to cause damage to the VIIIth nerve system in susceptible patients—should be condemned. As there is no known sensitivity test before administration of these antibiotics, their use should be restricted to those infective cases where no other antibiotic is proved to be effective. The then justifiable risk of permanent otitic damage is weighed against life itself.

I hope this criticism will be accepted by a 'remote' colleague.

W. F. Leith

213 County Building
Church Street
Pietermaritzburg

1. Holtzhausen, G. H. R. (1961): S. Afr. Med. J., 35, 905.

FULL-TIME MEDICAL STAFF AND THE MEDICAL ASSOCIATION

To the Editor: I had hoped my original letter¹ would arouse more argument, and various expressions of opinion, especially from full-time personnel. However, while I realize that Federal Council is re-assessing the situation, your Editorial² of 21 October and Dr. M. Shapiro's letter³ of 4 November demand immediate answers.

In your Editorial you list 18 services at present provided by the Association for its members. Apart from three, or at the most four, rather vague benefits, I cannot admit that the list affects the full-time medical officer, or supplies him with facilities he has not readily available from other sources.

Dr. Shapiro, in my opinion, has confirmed the charges I laid against the Association. He agrees that the Association devotes a great deal of time, thought and effort to the economics of private practice. Its success can probably be measured by the large number of resignations from full-time service in recent years. I accept that, in the long run, improvement in the economic status of the private practitioner—or for that matter of the country as a whole—will ultimately improve conditions in full-time service. Still, this is purely coincidental, and I do not believe that the Association has any thought of this possible consequence when it directs its efforts so intensively on behalf of the private practitioner.

In other words, the Association represents the private practitioner directly and the full-time officer indirectly and inadvertently. Further, should the interests of the two groups be at variance, as for example over the question of part-time personnel, the Association will almost instinctively support the private practitioner.

The full-time officer may understand this attitude, but fails to see why he should pay for it. He provides a great deal of assistance to the Association. No one has refuted my contention that without us the *Journal* and Congress would collapse

for lack of scientific material. I might add that university personnel make it possible to establish postgraduate courses and diplomas.

Finally, I notice that even in the British Medical Service, where there must inevitably be much more uniformity in the profession than exists here, University teachers pay a reduced subscription to the BMA.* The BMA, then, has accepted the principle of differential subscription rates.

Our Association must surely aim to represent equally the interests of all branches of the profession, and realize that some contribute more to the Association, and benefit considerably less from the services provided. Otherwise I am certain that the number of resignations of full-time personnel will continue to increase, since, to use Dr. Shapiro's words, 'elementary laws of economics and common sense' encourage anyone to relinquish a bad investment.

T. Randall

Baragwanath Hospital
Johannesburg
14 November 1961

* The subscription rates for members of the BMA, as published in the BMA Year Book 1961, were as follows:

Members Resident in Great Britain or Northern Ireland	
	Yearly
Ordinary subscription	£7 7 0
** Newly qualified practitioner elected before the expiration of five years from date of qualification for provisional registration under the Medical Acts:	
For first two complete years from date of such qualification	£2 2 0
For third year	£3 3 0
For fourth year	£4 4 0
For fifth year	£5 5 0
Any member engaged in full-time salaried employment, the salary of which is not more than £1,650 per annum (or such larger sum, not exceeding the standard rate, as the Council may from time to time determine)	£5 5 0
Whole-time non-professional member of the teaching staff of a university or medical school or engaged whole-time in special research	£4 4 0
Whole-time medically qualified Civil Servant	£4 4 0
Not less than 40 years' membership	£3 3 0
Permanently retired from practice with not less than 10 years' membership	£2 2 0
Husband and wife residing together	£8 8 0

Service Members Wherever Resident

Officers on the active list of any of the medical branches of the Armed Forces £4 4 0
(for newly qualified rate, whichever is the lower.)

Members Resident Outside Great Britain or Northern Ireland

Exclusive of local branch subscription (if any) £2 12 6

** A practitioner admitted to membership before 31 December next occurring after the date of qualification for provisional registration may compound all subscriptions for the first five years for the lump sum of twelve guineas.

At a recent annual meeting of the Representative Body of the BMA the subscription rate for ordinary members was raised from seven guineas to nine guineas and that for members resident outside Great Britain and Northern Ireland (in South Africa the equivalent of this will be unattached members) from £2 12s. 6d. to £3 3s. 0d. Presumably there will be a proportional increase for those subscriptions which lie between these two categories—Editor.]

1. Correspondence (1961): S. Afr. Med. J., 35, 883.

2. Editorial (1961): *Ibid.*, 35, 871.

3. Correspondence (1961): *Ibid.*, 35, 923.